Single Aisle
TECHNICAL TRAINING MANUAL
T1+T2 (IAE V2500) (Lvl 2&3)
OXYGEN

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OXYGEN

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OXYGEN SYSTEM COMPONENT LOCATION (2)

SYSTEM OVERVIEW

The oxygen system includes:
- the crew system,
- the passenger system,
- the portable system.

Crew Oxygen System:
The flight crew oxygen system supplies oxygen to the flight crew. It is used if there is a loss of cabin pressurization or smoke or dangerous gases in the cockpit.
The oxygen is supplied by a high-pressure oxygen cylinder to quick-donning masks in the cockpit.
Passenger Oxygen System:
The passenger and cabin attendant oxygen system is supplied by chemical oxygen generator units that are in the cabin, the cabin attendant stations, the lavatories and the galleys.
There are two types of chemical generators that supply oxygen for 15 minutes or 22 minutes.
Portable Oxygen System:
The portable oxygen system supplies oxygen to the passengers, the cabin attendants and the flight crew if an emergency occurs and for first aid treatment.
The Portable Breathing Equipment (PBE) supplies breathing means and eye protection to the flight crew members and the cabin attendants.
It lets them move freely to extinguish a fire.
The high-pressure portable cylinder includes continuous-flow type masks and supplies first aid oxygen to the passengers.

SYSTEM OVERVIEW

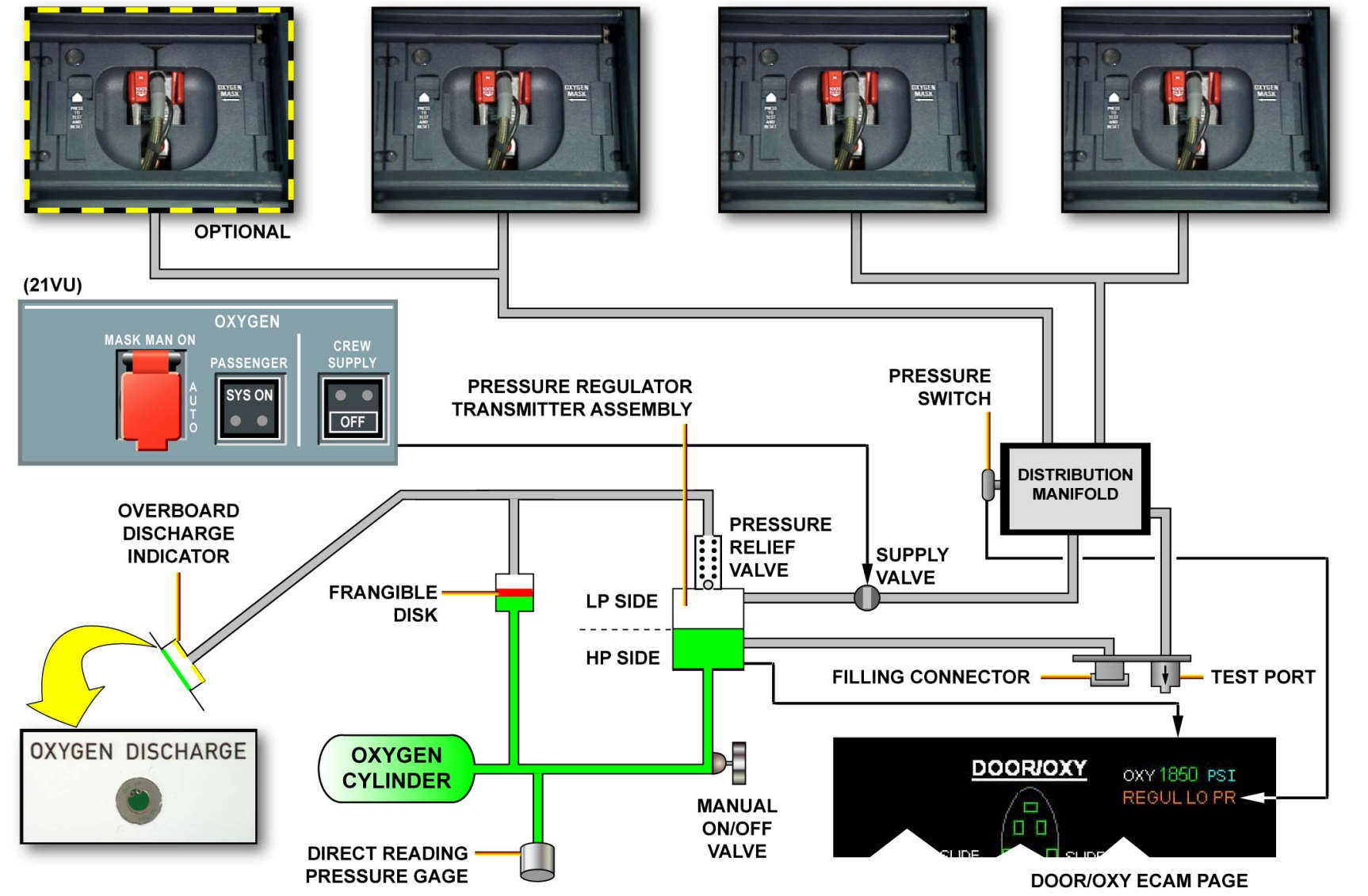
OXYGEN SYSTEM COMPONENT LOCATION (2)

SYSTEM OVERVIEW (continued)

FLIGHT CREW OXYGEN SYSTEM

The flight crew oxygen is supplied from a high-pressure oxygen cylinder at a pressure of 127.5 bar (1.850 psig).
This cylinder can be isolated for maintenance by a manual ON/OFF valve.
A direct-reading pressure gage gives an indication of the cylinder pressure, independently of the open or closed position of the manual valve.
The cylinder is installed in a cradle with two quick-release clamps in the L/H avionics compartment.
A pressure regulator transmitter assembly is directly connected to the cylinder.
It includes a high-pressure stage with an integrated pressure transducer for ECAM indication and a low-pressure stage.
The pressure regulator regulates the low pressure at 4.48 to 6.48 bar (65 to 94 psig).
A supply valve opens or closes the crew oxygen supply. The CREW SUPPLY P/B on the oxygen panel controls the supply valve.
High-pressure and low-pressure protection is done by safety devices that include a high-pressure safety outlet and a low-pressure safety outlet.
The high-pressure safety outlet is a frangible disk type. The low-pressure safety outlet is a pressure relief valve. Rupture of the frangible disk is set at a cylinder pressure of 2500 to 2775 psig. The pressure relief valve sets the limit of the low-pressure oxygen supply to 175 psig.
An overboard green discharge indicator is connected to the high-pressure safety outlet and to the low-pressure safety outlet.
If there is overpressure, the green disk blows out and a yellow indicator comes into view to show that the cylinder was discharged or the pressure relief valve is open.
A pressure switch and a test port are connected to the distribution manifold.
The pressure switch operates when the oxygen supply pressure decreases to 3.45 plus or minus 0.35 bar (50 plus or minus 5 psig) and transmits a warning signal REGUL LO PR to the ECAM/DOOR/OXY page.
The optional filling connector makes it possible to fill the oxygen cylinder without removal of the cylinder from the aircraft.
On the lower ECAM DU, on the DOOR/OXY page, the oxygen pressure in a cylinder with a capacity of 77 cubic feet is shown as follows:
(a) < 400 psig, in amber.
(b) 400 psig, in green. The indication flashes in green when the pressure is less than 800 psig and the DOOR/OXY page comes into view automatically.
(c) An amber half-frame comes into view when the oxygen pressure is less than 1500 psig.
For a cylinder with a capacity of 115 cubic feet:
(d) < 300 psig, in amber.
(e) 300 psig, in green. The indication flashes in green when the pressure is less than 600 psig and the DOOR/OXY page comes into view automatically.
(f) An amber half-frame comes into view when the oxygen pressure is less than 1000 psig.
If the oxygen pressure decreases to less than the minimum operating pressure of 3.45 plus or minus 0.35 bar (50 plus or minus 5 psig), the indication REGUL LO PR is shown in amber on the DOOR/OXY page.
The mask assembly and the stowage box are installed adjacent to each crew member seat.
The stowage box contains the mask. When the mask is pulled out of the box, a supply valve installed in the stowage box opens and lets oxygen flow to the mask.

To use the mask, squeeze the red clips. This will inflate the mask harness.
Bring the mask in position and release the red clips.
When the red clips are released, the oxygen flow to the harness stops and the oxygen that remains in the harness is released into the atmosphere.
The mask is then ready to be used.



SYSTEM OVERVIEW - FLIGHT CREW OXYGEN SYSTEM

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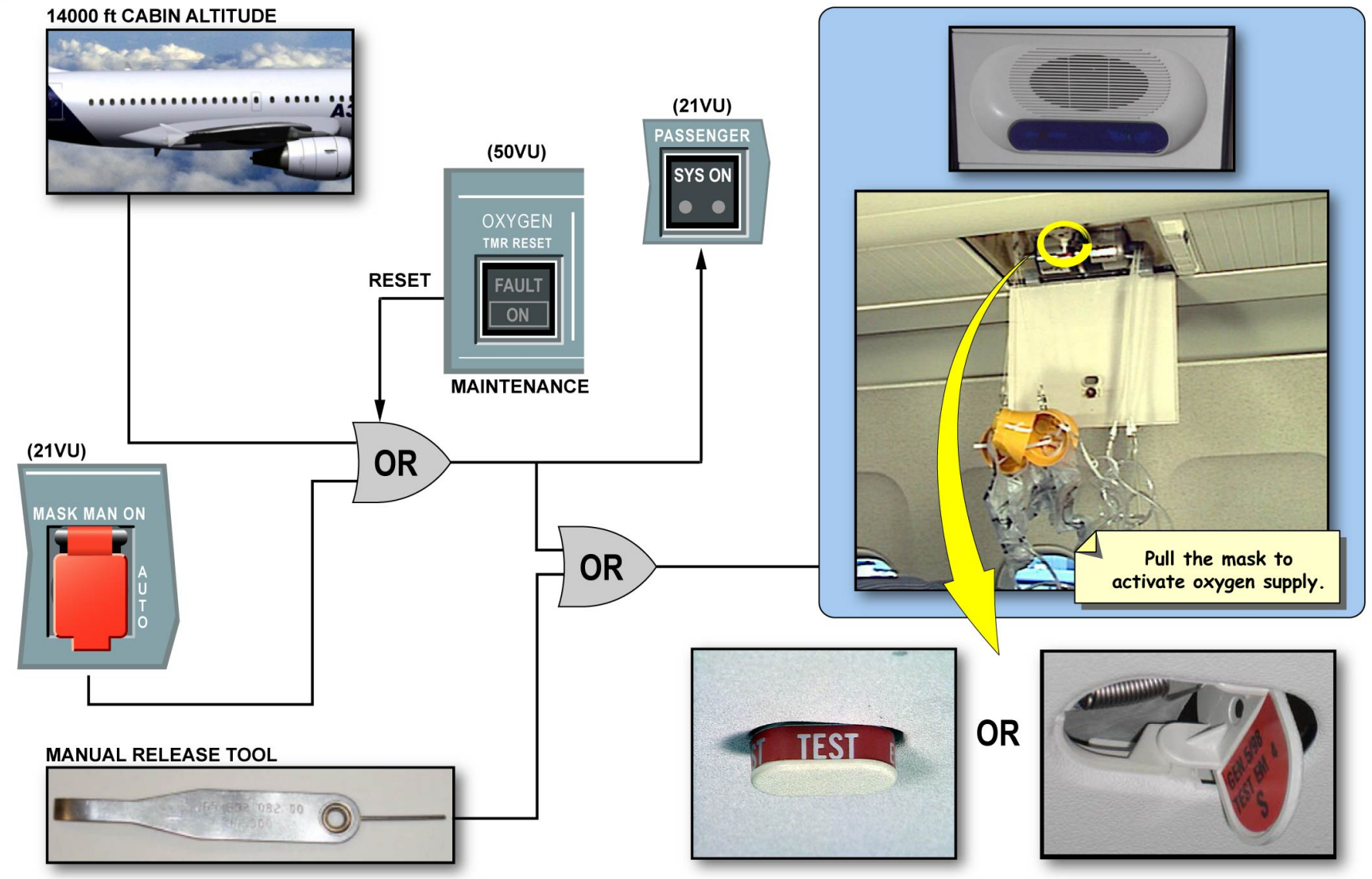
OXYGEN SYSTEM COMPONENT LOCATION (2)

SYSTEM OVERVIEW (continued)

PASSENGER OXYGEN SYSTEM

The masks fall automatically when the cabin altitude is higher than 14,000 feet or manually when a crew member pushes the MASK MANual ON pushbutton.
A taped message is transmitted on the passenger address system.
The passenger SYStem ON indicator light comes on white when the passenger oxygen system is electrically supplied.
A reset is available to rearm the electrical system after mask re-stowage.
The door can be opened manually with a release tool if there is a failure of the container door opening system.
When the TiMeR RESET pushbutton is pushed, the ON white light of the TMR RESET pushbutton comes on.
The indicator light SYS ON goes off and the taped announcement stops.
On the ground, used chemical oxygen units must be replaced and all masks must be re-stowed.
The system is reset when the TMR RESET pushbutton is pushed momentarily on the maintenance panel.
Manually operated door stops are installed on the container doors.
These stops are used to do an operational test of the mask release system.
In the test position, because of the stops, the doors will not open fully and the masks will not fall out of the container.



SYSTEM OVERVIEW - PASSENGER OXYGEN SYSTEM

OXYGEN SYSTEM COMPONENT LOCATION (2)

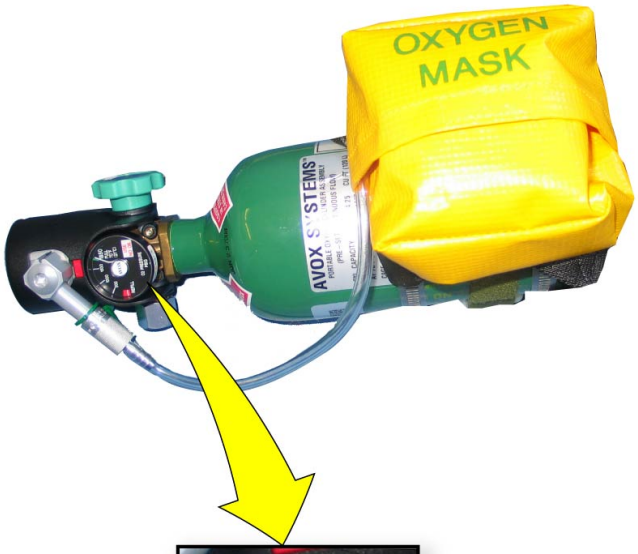
SYSTEM OVERVIEW (continued)

CREW PORTABLE OXYGEN SYSTEM

The crew oxygen bottle pressure is shown on the bottle direct-reading gage.
When the needle is in the FULL range of the gage, the pressure is correct.
If the pressure is incorrect, it is necessary to replace the portable oxygen bottle.
The PBE is vacuum-packed in a transport/storage container.
The container includes two indications, which are used for preflight inspection:
- A good condition indicator (related to the PBE type, e.g. green - operational, red - not operational),
- A tamper seal (in position - operational, broken - not operational).

- ✓Portable oxygen bottle check
- ✓PBE check

PORTABLE OXYGEN BOTTLE



PRESSURE READING GAGE

TAMPER SEAL

GOOD CONDITION
INDICATOR

PORTABLE BREATHING EQUIPMENT
(PBE)

SYSTEM OVERVIEW - CREW PORTABLE OXYGEN SYSTEM

OXYGEN SYSTEM COMPONENT LOCATION (2)

COMPONENT LOCATION

The cockpit crew oxygen system is in the forward area of the aircraft on the LH side.
The Passenger and cabin crew oxygen containers are above the seats in the hatracks, the lavatories, the galleys and the cabin attendant stations.
The portable oxygen cylinders and the smoke hoods are in the cockpit and in the cabin near the cabin attendant station.

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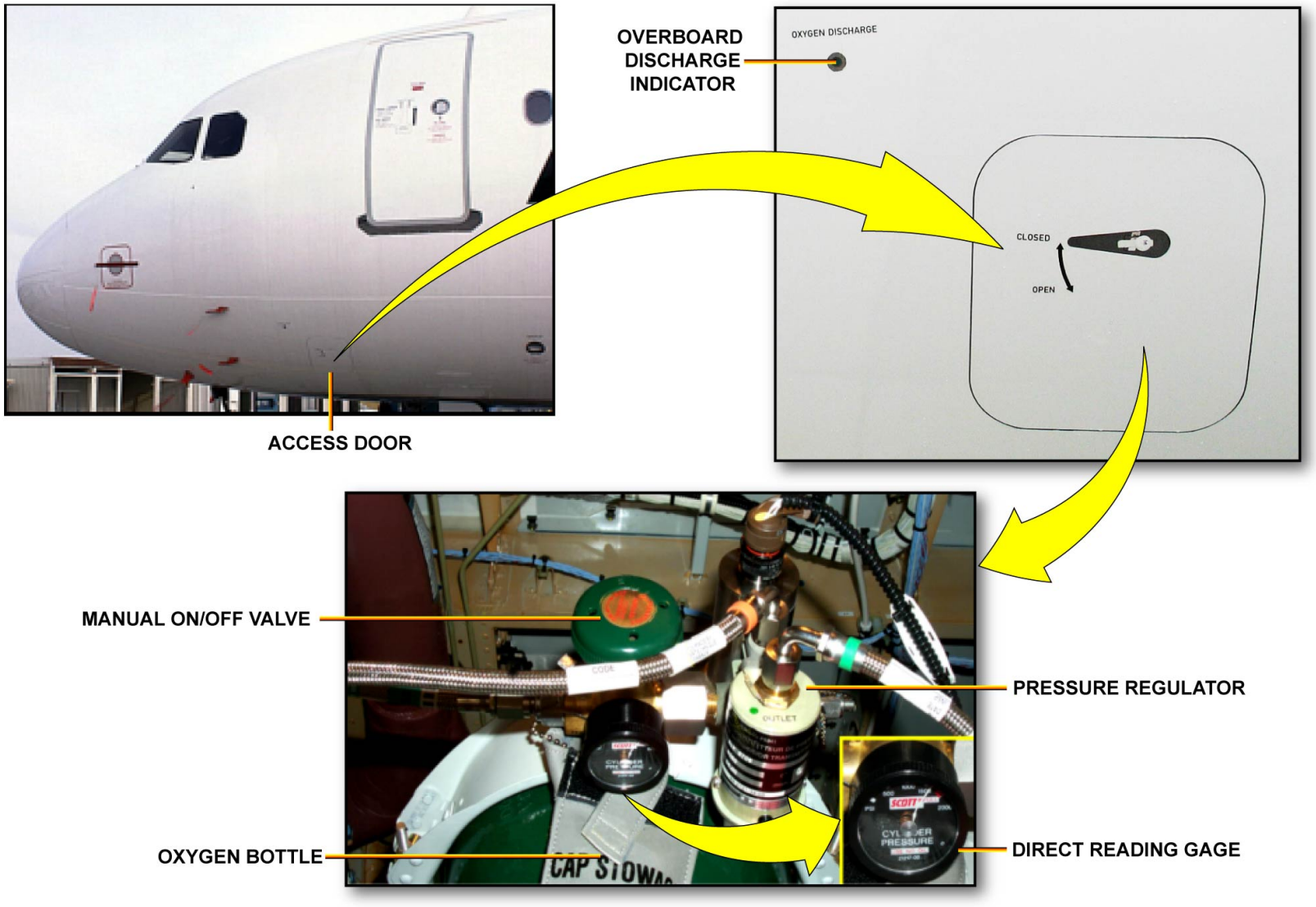
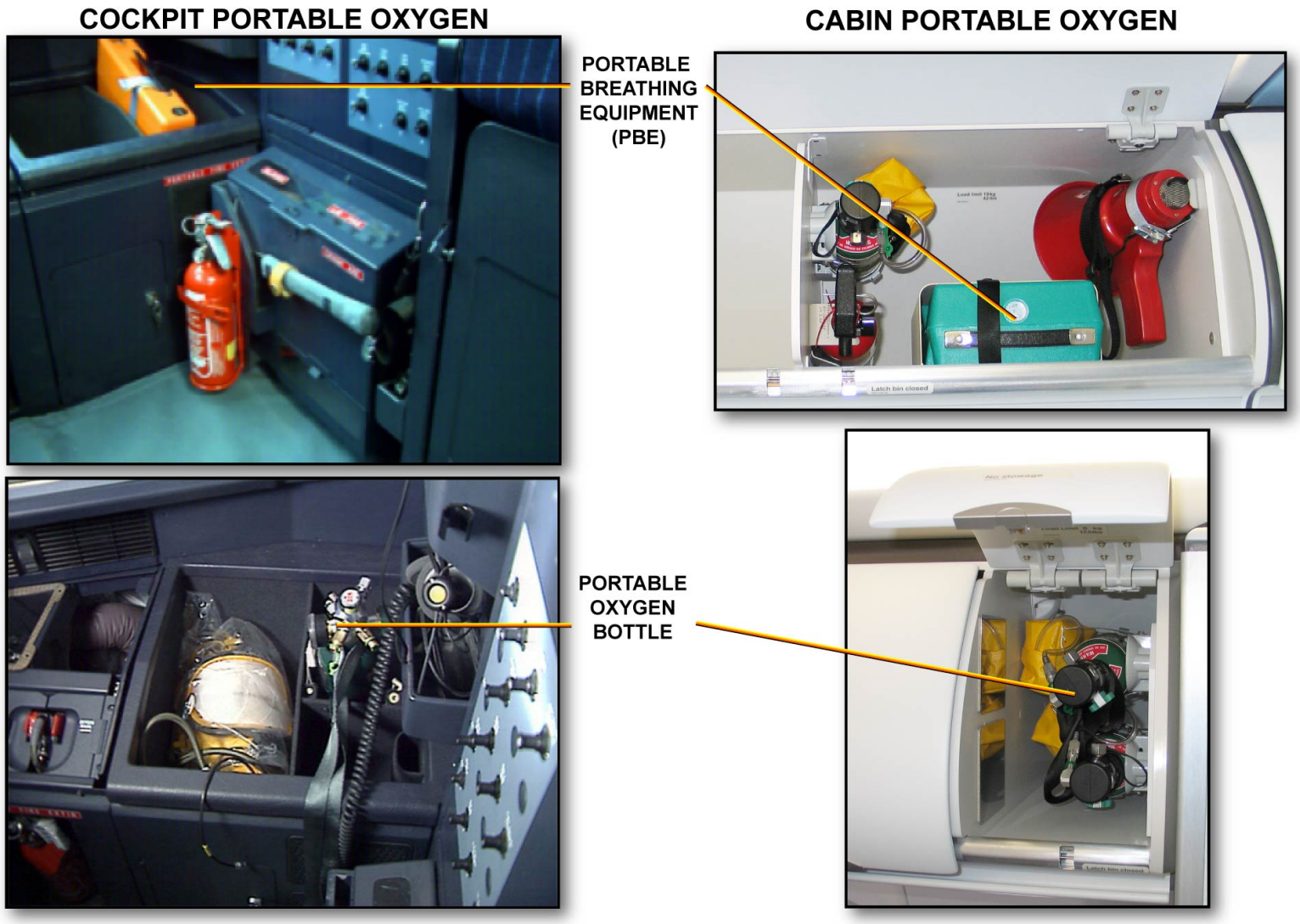


COMPONENT LOCATION



COMPONENT LOCATION

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OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

OXYGEN PROPERTIES

The air is made of 21% oxygen, 78% nitrogen and 1% other gases.
The gaseous oxygen is colorless, odorless and tasteless.
The gaseous oxygen is not flammable, but supports combustion.
The gaseous oxygen is heavier than air and can accumulate in low lying areas.
The oxygen reacts to most metals and organic material.
The reactivity varies with the type of material:
- The reaction can be slow and can cause for example steel oxidation commonly called rust,
- The reaction can be fast when the oxygen is in contact with petroleum product, and can cause fire or explosion.

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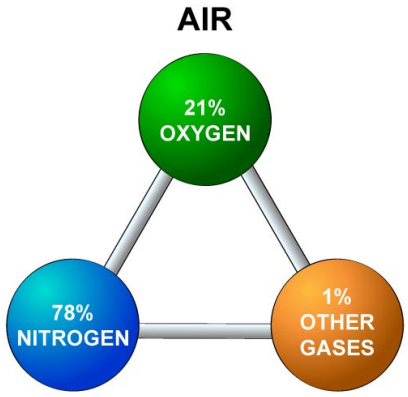


OXYGEN :

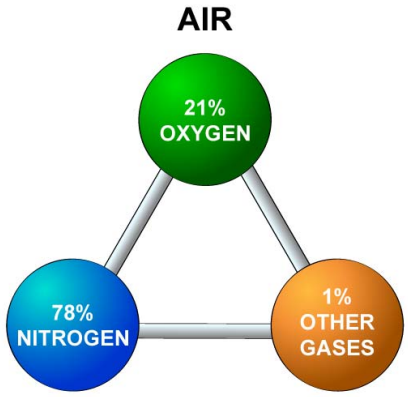
I am invisible ... !

I am silent ... !

I have no smell ... !

I help to burn very quickly ... !

OXYGEN PROPERTIES



OXYGEN :

I am invisible ... !

I am silent ... !

I have no smell ... !

I help to burn very quickly ... !

EXAMPLE OF OXYGEN INCIDENT

OXYGEN PROPERTIES

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OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

AIRCRAFT OXYGEN SYSTEMS

At high altitude, the pressurization (ATA 21) system maintains a sufficient air pressure, thus oxygen partial pressure, in the aircraft.
In case of aircraft depressurization the oxygen systems (ATA35) supply sufficient oxygen partial pressure to the crew and passengers until the aircraft gets at lower altitude (10000ft).
A lot of those systems use bottle of highly pressurized oxygen.

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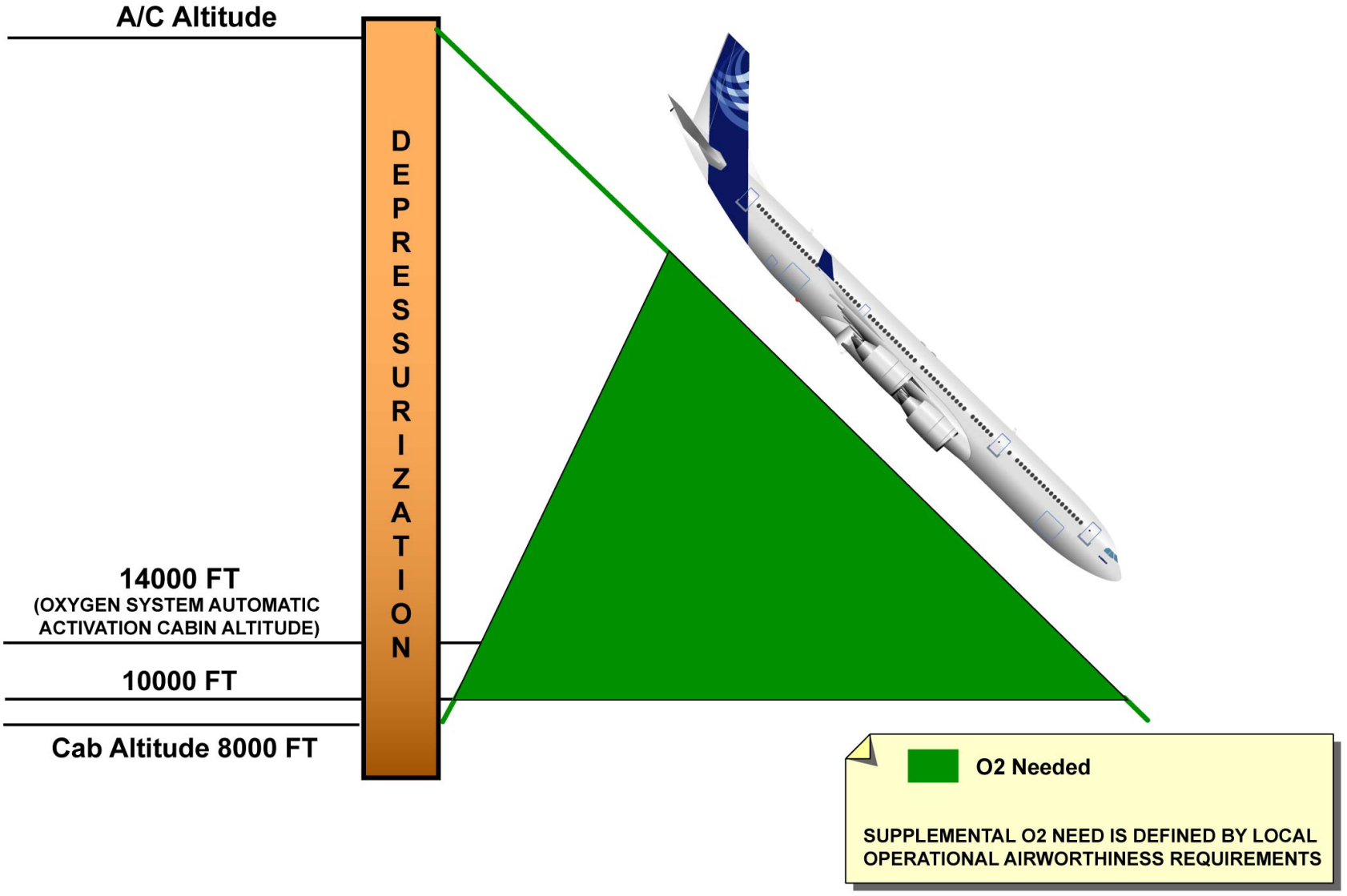
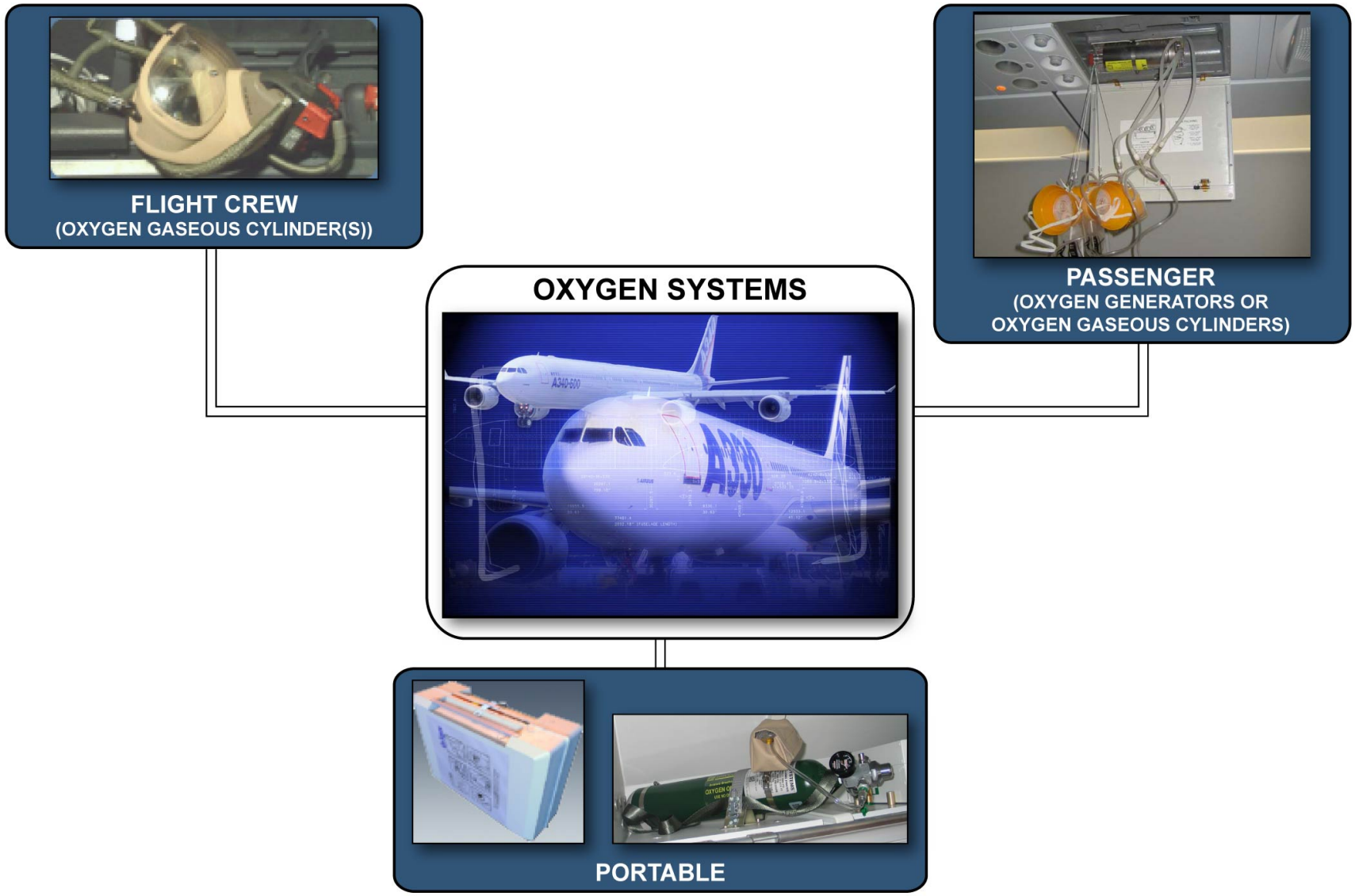


AIRCRAFT OXYGEN SYSTEMS



AIRCRAFT OXYGEN SYSTEMS

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OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

THE FIRE TRIANGLE

If one of these elements is missing, no fire / explosion can occur:
- Oxygen,
- Combustible material and,
- An ignition source,

are put together, fire can start and keep on going.

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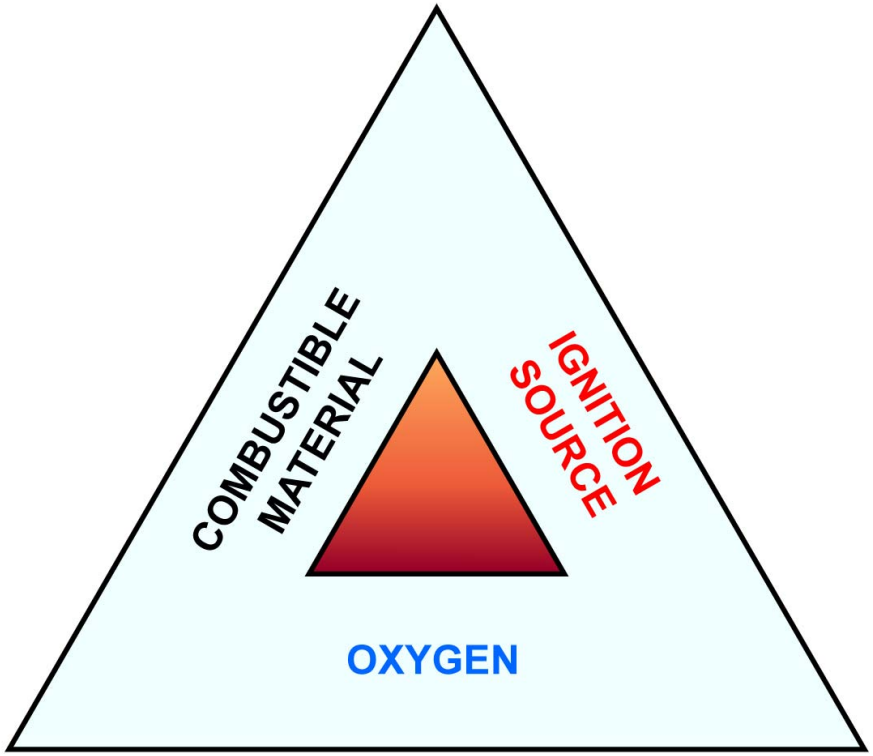

FIRE TRIANGLE

THE FIRE TRIANGLE

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

THE FIRE TRIANGLE (continued)

IGNITION SOURCES

The ignition sources are (examples):
- Raw flame (from cigarettes),
- Incandescent particles (from grinding during structure repairing...),
- Electrical overheating (from electrical engines, bad contact),
- Electrical discharge (static electricity, short circuit, mobile-phone operation, lightning during thunderstorm...),
- Oxygen overheating due to either too high pressure or, quick opening or closure of oxygen valves (sudden pressurization) or impact on the oxygen bottle (molecules agitation),
- Traces of hydrocarbon (petroleum product) mixed with pure oxygen.

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IGNITION SOURCES

RAW FLAME (FROM CIGARETTES)

INCANDESCENT PARTICLES

ELECTRICAL OVERHEATING

ELECTRICAL DISCHARGE

QUICK OPENING = OXYGEN OVERHEATING

TRACES OF HYDROCARBON

THE FIRE TRIANGLE - IGNITION SOURCES

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

THE FIRE TRIANGLE (continued)

OXYGEN ENRICHED ATMOSPHERE

An atmosphere is considered as an oxygen-enriched atmosphere when the oxygen percentage is 24% and above.
In comparison to a fire in the air, a fire in an oxygen-enriched atmosphere will be characterized by:
- High in intensity,
- Higher in temperature and,
- Higher in thermal power.

Pure oxygen at high pressure will react violently with materials such as oil, grease, textiles and rubber, and will get powerfully in fire.
In most cases, a fire that occurs in an atmosphere full of oxygen cannot be extinguished as long as the cause of fire has not been isolated.

FIRST AID

Persons getting on fire in an atmosphere full of oxygen cannot get help directly by a person entering the area. The rescuer takes also the risk to get on fire.
The victim must be sprayed of water and carried outside in free air as soon as possible.
The first aid care must be applied immediately and if possible in a specialized care unit for badly burned person.

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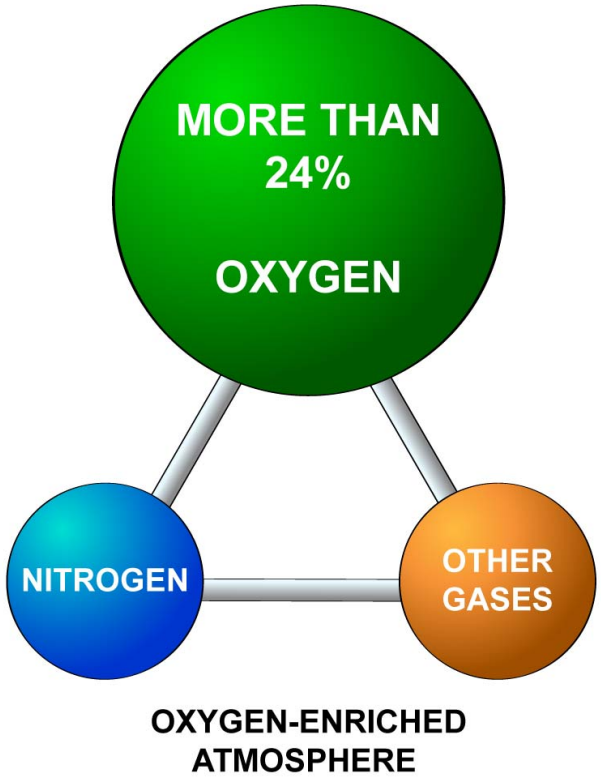

THE FIRE TRIANGLE - OXYGEN ENRICHED ATMOSPHERE & FIRST AID

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

THE FIRE TRIANGLE (continued)

DANGERS LINKED TO PRESSURIZED GAS

The oxygen is stowed in cylinders at very high-pressure: 1850psi at 21°C, 130kg/cm^2. Such a high pressure is potentially dangerous.
Any crack in the pressure wall of pressurized gas system causes a violent eruption of gas through the crack. The result can be a high or even violent explosion.
For example, if a valve brakes off a high-pressure cylinder, the container becomes an unguided missile.
That is the reason why the oxygen cylinders and pressure reducers must be tested at regular intervals (hydrostatic test every 3 - 5 years depending on applicable standard / special permit).

DANGERS LINKED TO PRESSURIZED GAS

THE FIRE TRIANGLE - DANGERS LINKED TO PRESSURIZED GAS

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

LEAK IN CONFINED AREA

In Flight the stowage compartments of oxygen bottle are naturally ventilated through the cabin ventilation system (air flow from DADO panel to outflow valve).
On the ground, when the aircraft is parked not powered (dead aircraft), these ventilations are not effective any more.
The oxygen bottle and the distribution lines are installed in confined area.
In the case of oxygen leak, the percentage of oxygen in the air will be higher.

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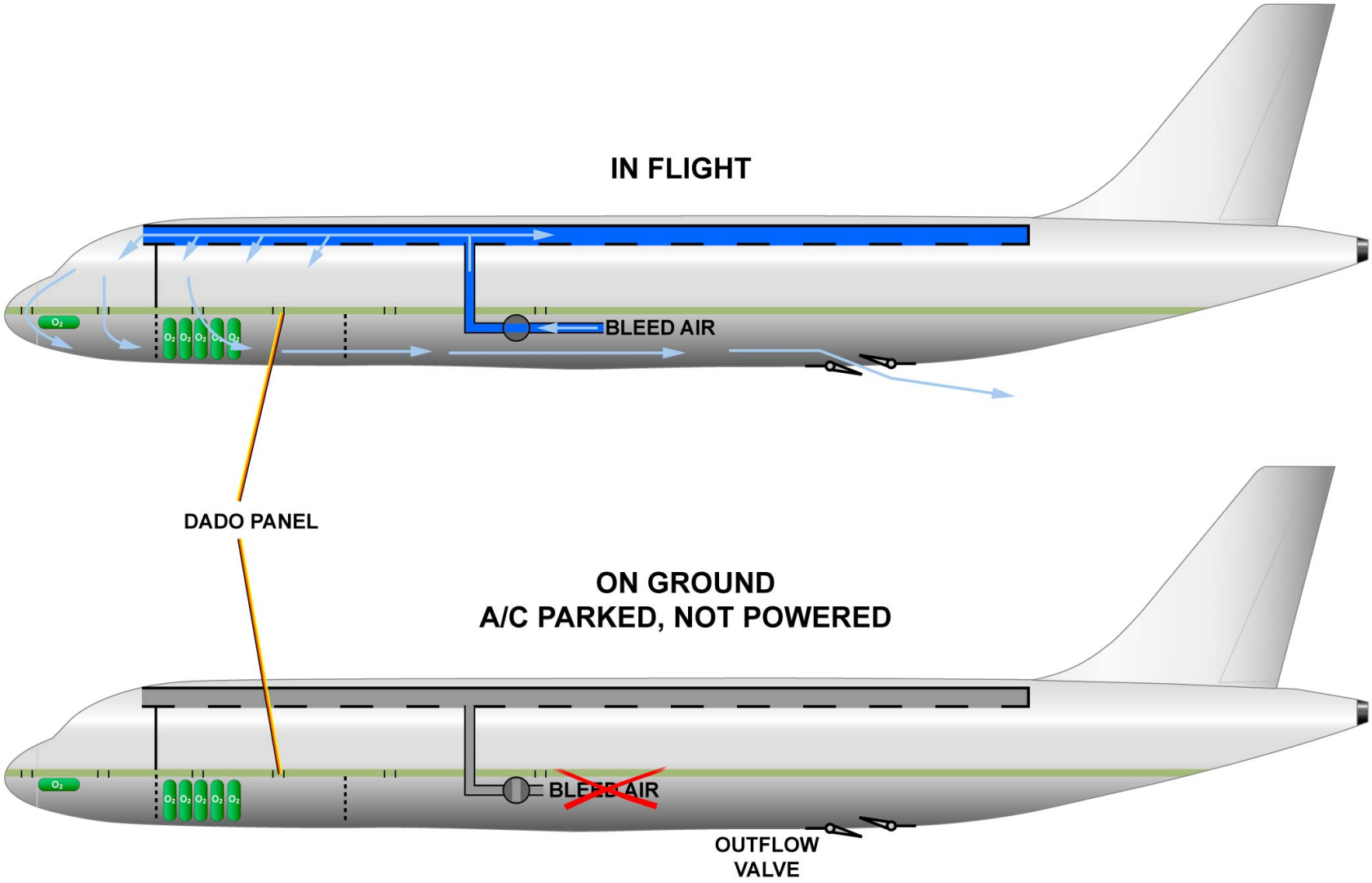

LEAK IN CONFINED AREA

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

LEAK IN CONFINED AREA (continued)

OXYGEN DETECTOR

The oxygen enrichment is not detected by human senses.
An oxygen detector can be used before to get inside an area filled of oxygen.
If there is too high oxygen concentration in this area, do not go into this area and ventilate.

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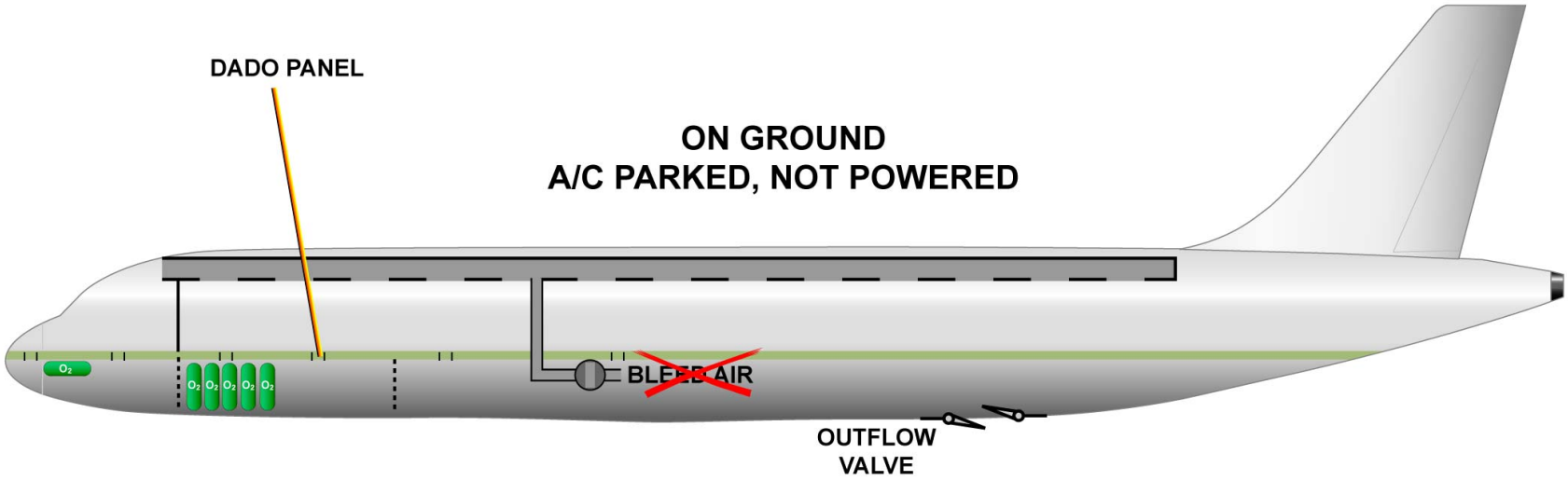
EXAMPLE OF OXYGEN DETECTOR



LEAK IN CONFINED AREA - OXYGEN DETECTOR

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

LEAK IN CONFINED AREA (continued)

CLOTHES, SKIN AND EQUIPMENT

Clothing, skin and equipment must be free of oil or grease.
Clothes and hair tend to absorb oxygen. Consequently, a person in an area where the air is filled with oxygen will keep a high concentration of oxygen. This oxygen stays on for some time. This person must avoid any source of ignition for 15 minutes, smoking for example.

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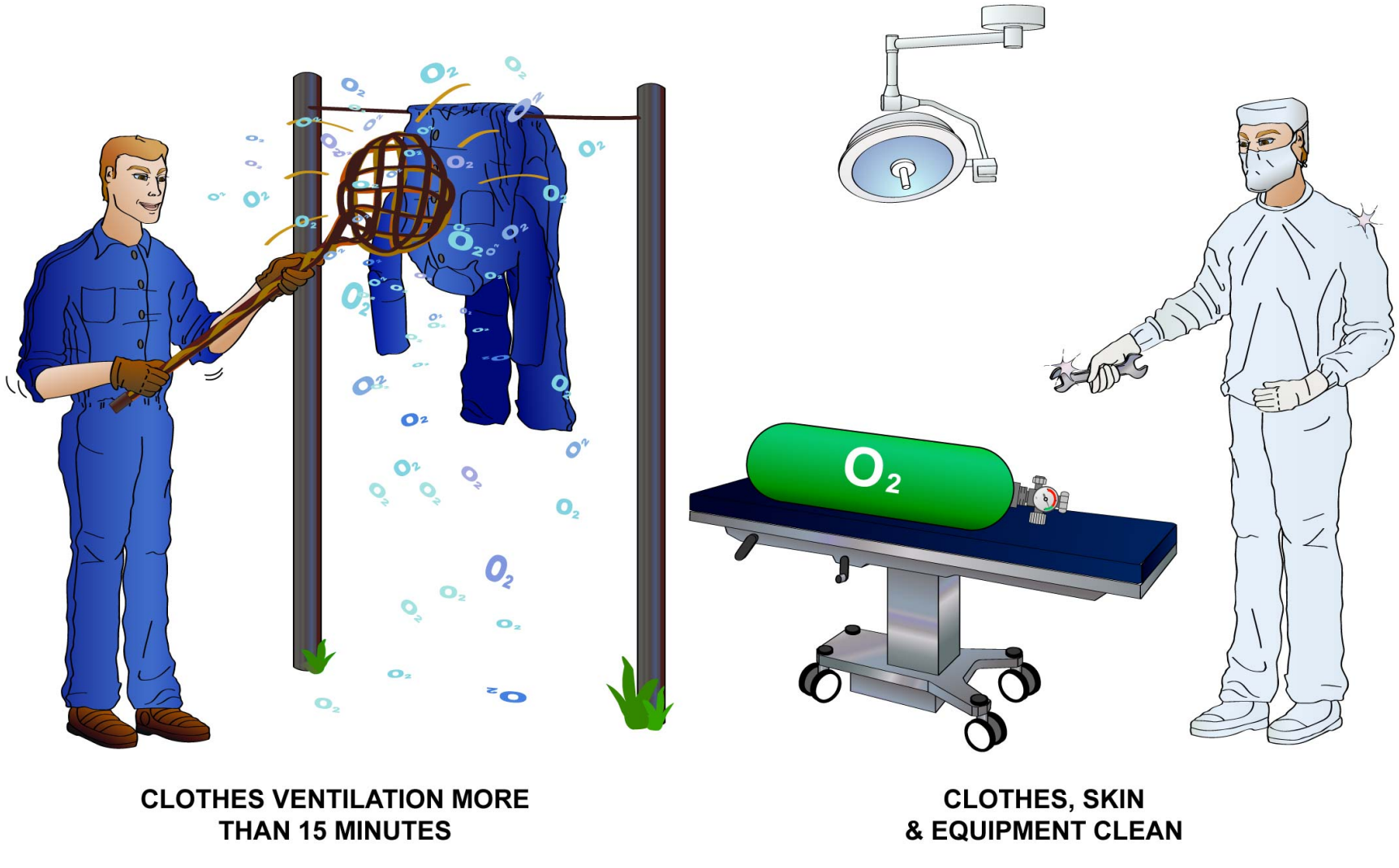

LEAK IN CONFINED AREA - CLOTHES, SKIN AND EQUIPMENT

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

SAFETY PRECAUTIONS

Make sure that you use the correct Airbus documentations corresponding to the aircraft (task in AMM, PN in IPC, SB...). Carefully obey the maintenance procedure instructions. If you do not obey these instructions, you can cause a fire or an explosion.
Prevent all maintenance procedures nearer than 5m (16.4ft) from the working area of the aircraft.
Stop all refueling, and all repairs on fuel and hydraulic systems.
Stop all procedures that use flammable material such as cleaning and de-icing material.
Stop all operations that cause heat and flame (For example: drilling holes...).

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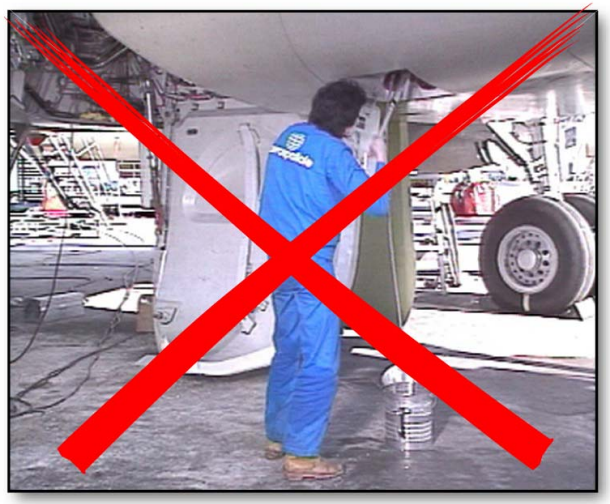
STOP REFUELING

STOP HYDRAULIC SERVICING



STOP DE-ICING

STOP OPERATIONS CAUSING HEAT & FLAME

SAFETY PRECAUTIONS

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

SAFETY PRECAUTIONS (continued)

DURING OXYGEN SERVICING

Put a warning notice in the cockpit, the work area and the cabin to tell persons not to operate electrical switches during the oxygen filling procedure.

Electrostatically ground the aircraft and also electrostatically bond the oxygen charging equipment to the aircraft.

If a thunderstorm can occur, immediately stop all oxygen filling operations.

Stop the filling procedure immediately if the pressures in each oxygen cylinder do not increase smoothly and at the same time. Only use aviator's breathing oxygen as defined by Airbus.

Keep all hydrocarbons (fuels, corrosion protection compounds, lubricants, etc.) away from all sources of oxygen. Oxygen becomes explosive when it touches hydrocarbons.

Open the hand-valves of the oxygen cylinder very slowly and turn them to the fully open position. In the case the hand-valves are not fully open before flight, the data of the oxygen pressure on the corresponding ECAM page will not be correct.

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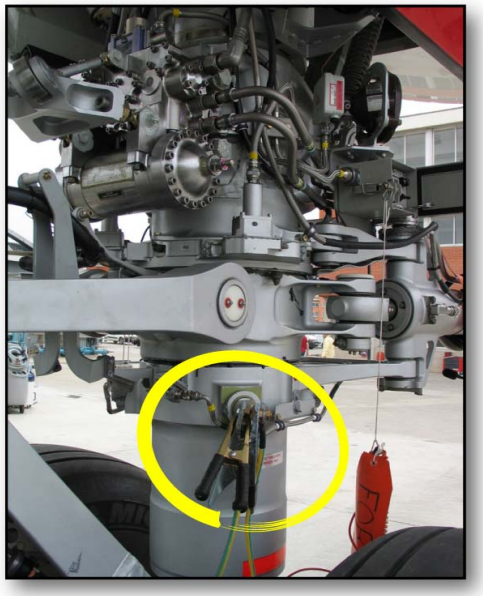
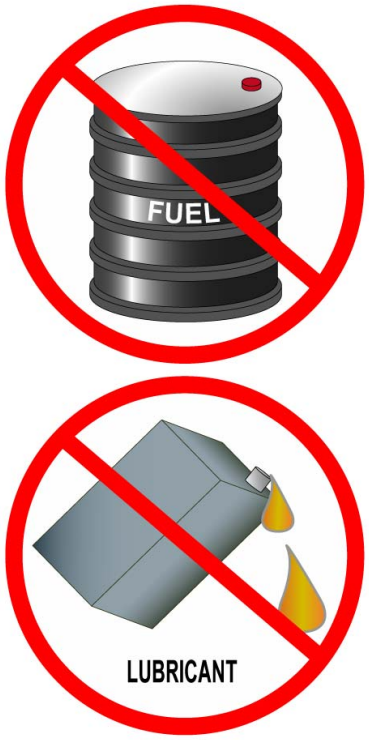
OXYGEN SERVICING EQUIPMENT



ELECTROSTATICALLY GROUND THE AIRCRAFT

STOP OXYGEN SERVICING IF THUNDERSTORM

SAFETY PRECAUTIONS - DURING OXYGEN SERVICING



VERY SLOWLY OPENING

SAFETY PRECAUTIONS - DURING OXYGEN SERVICING

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OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

SAFETY PRECAUTIONS (continued)

OXYGEN COMPONENTS REMOVAL AND INSTALLATION

Make sure that the ground support equipment is approved for the oxygen system. Equipment that is not approved can cause contamination of the system and injury.
Always work with clean clothes and tools. Keep your hands clean (possibly, wear gloves in cotton). Do not touch connection ends and interior of oxygen components with bare hands, because skin oil and bacteria are a source of contamination.
The area around the oxygen components must always be cleaned with approved cleaner before and after any work done on the system. Any tool, rag, cloth, or equipment that is not clean and free of oil traces must not be used or stay in the area around the oxygen components.
Make sure that all oxygen cylinder valves are closed. Due to possible residual pressure in the line, disconnect the connectors carefully.
Put dry, clean, metal or plastic plugs on all pipes or units removed temporarily. Put each pipe or unit in a sealed vinyl bag. Unwanted material in the oxygen system could damage the system or cause explosion if oil ingress.

WARNING: NEVER USE STANDARD OIL TO LUBRICATE THE CONNECTOR THREAD (risk of explosion).
ONLY LUBRICANTS and thread compounds SPECIFICALLY APPROVED FOR OXYGEN must be used.
Some unit/assembly are heavy.
Support the unit/assembly carefully to prevent injury to persons and damage.
During disconnection/reconnection of an oxygen line connector use two wrenches: one for the nut and one for the counter nut to avoid force onto the material (risk of rupture and leakage).
Make sure that the flexible hoses are not twisted or pulled tight. If the hoses are twisted or pulled tight the connections will break and cause a leak.
Torque the connection at the right value given by the maintenance manual.
Open and close the spring-loaded clamps carefully to prevent damage to the electrical harness near the oxygen cylinders.

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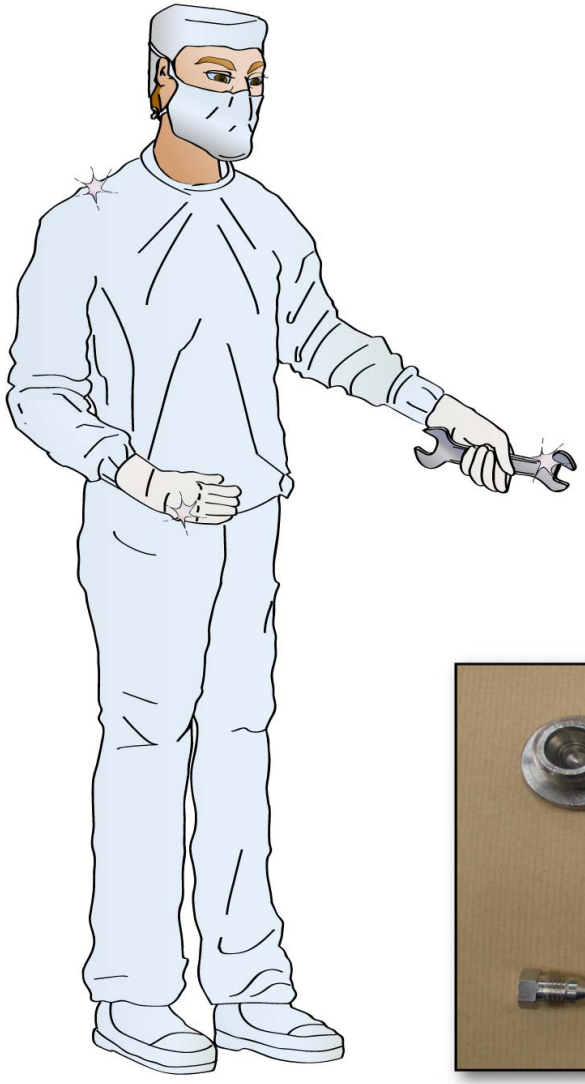


USE CLEAN PLUG

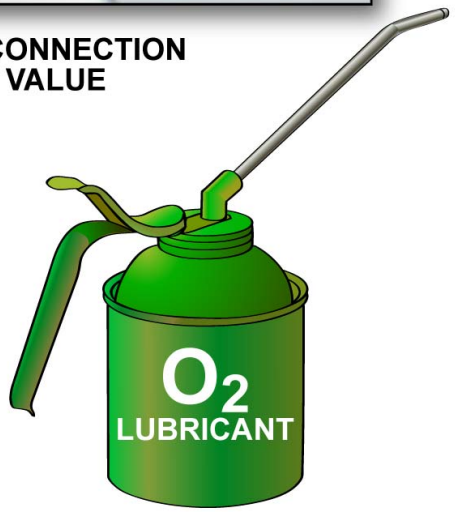
PUT EACH PIPE IN A SEALED VINYL BAG

SAFETY PRECAUTIONS - OXYGEN COMPONENTS REMOVAL AND INSTALLATION

WARNING

NEVER USE STANDARD OIL TO LUBRICATE THE CONNECTOR THREAD (RISK OF EXPLOSION).

TORQUE THE CONNECTION AT RIGHT VALUE



SAFETY PRECAUTIONS - OXYGEN COMPONENTS REMOVAL AND INSTALLATION

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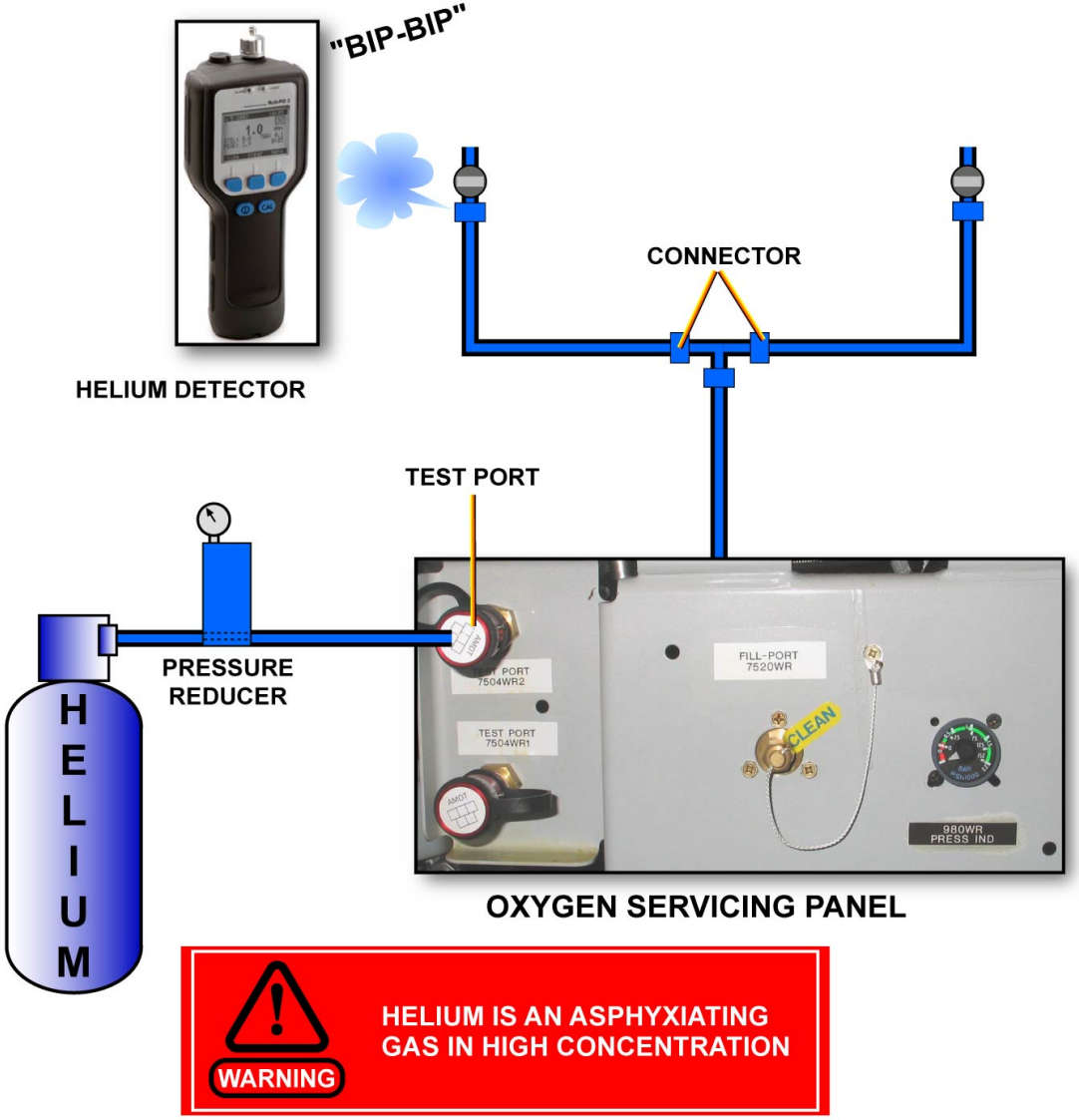
OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

SAFETY PRECAUTIONS (continued)

LEAK DETECTION

Make sure that the leak detector products and test equipment are approved for the oxygen system.
Equipment or products that are not approved can cause contamination of the system and injury to personnel (fire, explosion).
Make sure that the items in the "fixtures, tools, and test and support equipment" paragraph are applicable to your aircraft. Refer to the applicable task and subtasks.

UGB13131 - U7ST0M0 - XM35Y1000000001



LEAK DETECTION PRODUCTS

SAFETY PRECAUTIONS - LEAK DETECTION

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

SAFETY PRECAUTIONS (continued)

OXYGEN SPECIFIC USE

Oxygen must be used only for oxygen system servicing.
Never use oxygen for other purposes such as tire or accumulator inflation, blowing of dust...

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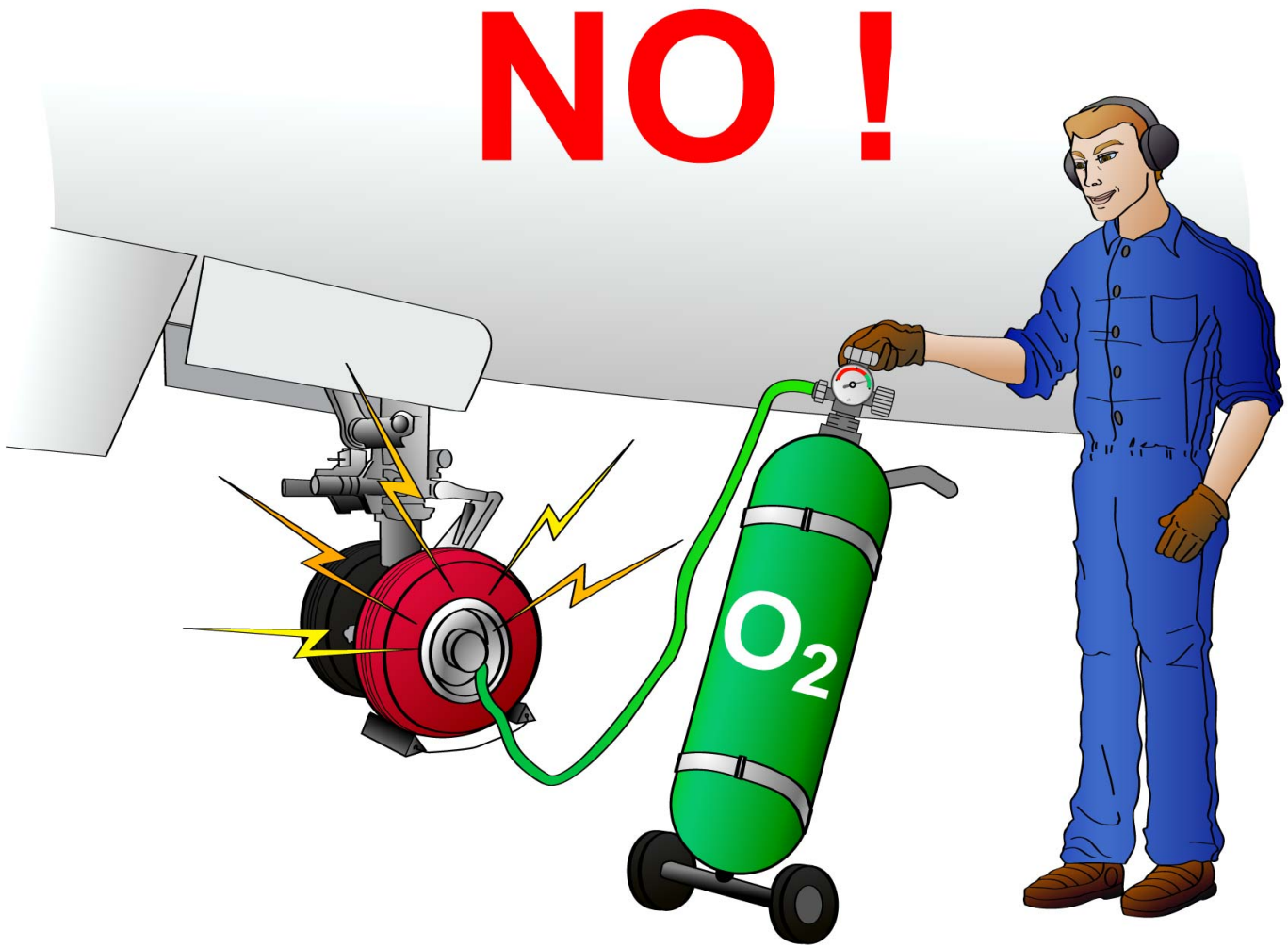

OYXGEN USED ONLY FOR OXYGEN SYSTEM SERVICING

SAFETY PRECAUTIONS - OXYGEN SPECIFIC USE

OXYGEN SAFETY IN AIRCRAFT MAINTENANCE ENVIRONMENT (2)

SAFETY PRECAUTIONS (continued)

OXYGEN TRANSPORTATION

Oxygen cylinders or oxygen chemical generators are classified as dangerous material.
As a result, their transportation by aircraft is restricted and must comply with specific regulations of International Air Transport Association (IATA).

UGB13131 - U7ST0M0 - XM35Y1000000001

SAFETY PRECAUTIONS - OXYGEN TRANSPORTATION

CREW OXYGEN MASK UTILIZATION/STOWAGE/TESTS (2)

UTILIZATION

The mask assembly and the stowage box are installed adjacent to each crewmember seat. The stowage box which contains the mask, also controls the flow of oxygen when the mask is pulled out of the box. To use the mask, squeeze the red clips, which will inflate the mask harness; releasing the red clips will stop oxygen flow to the harness and vent the oxygen remaining in the harness to the atmosphere. Oxygen flow is indicated by the blinker showing yellow and an OXY ON flag, which appears on the left door when closed. The mask regulator provides either normal or pure oxygen by means of a Normal/100% selector. In the Normal position, the user breathes a mixture of cabin air and oxygen. When the selector is in the 100% position, the user will breathe pure oxygen. When the emergency rotation knob is rotated, the mask regulator supplies 100% of oxygen at a permanent positive pressure, independent of the position of the normal/100% selector. To take the mask off, the harness has to be inflated. This is done by operating the red clips.

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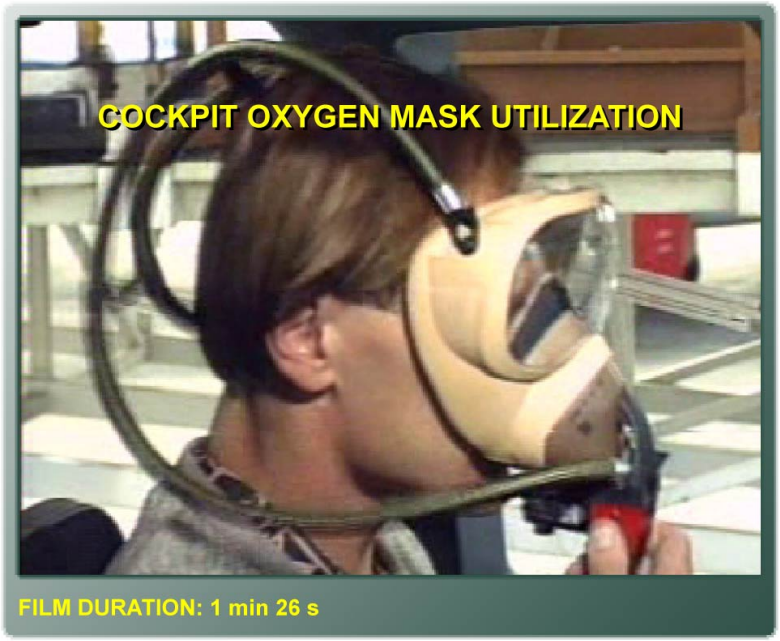

UTILIZATION

CREW OXYGEN MASK UTILIZATION/STOWAGE/TESTS (2)

STOWAGE

Proper stowing of the mask is essential for quick and efficient donning of the mask. Open the stowage box flap doors, and position the flexible hose correctly. Engage the mask assembly, regulator on top. Close the left flap door carefully while pushing the reset test slider to retract the OXY ON flag. At the end of the restowing operation, do the: IN SITU TESTING.

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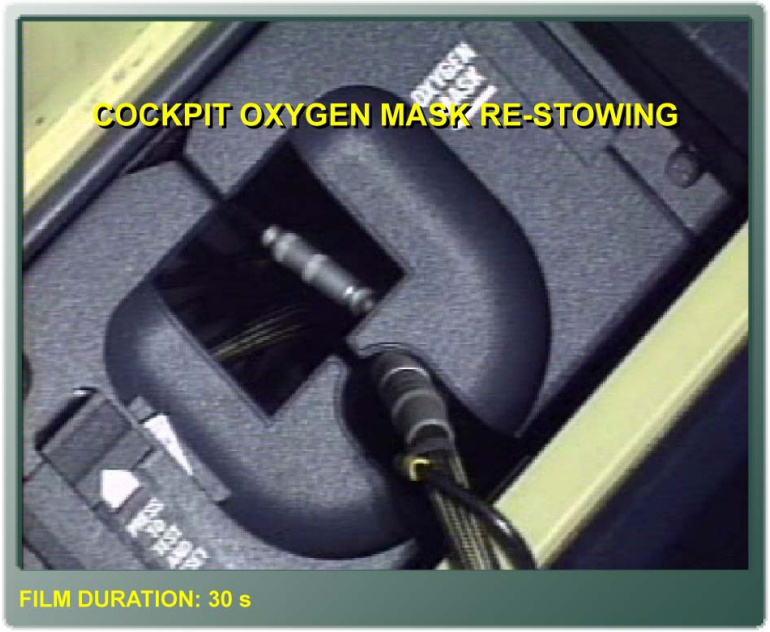

STOWAGE

CREW OXYGEN MASK UTILIZATION/STOWAGE/TESTS (2)

TESTS

Push the reset test slider. The blinker turns yellow and goes black again showing that the regulator is leak tight.
Press the harness inflation control. The blinker turns yellow and goes black again showing that the harness is leak tight. The on demand system is tested by pressing the emergency rotation knob.

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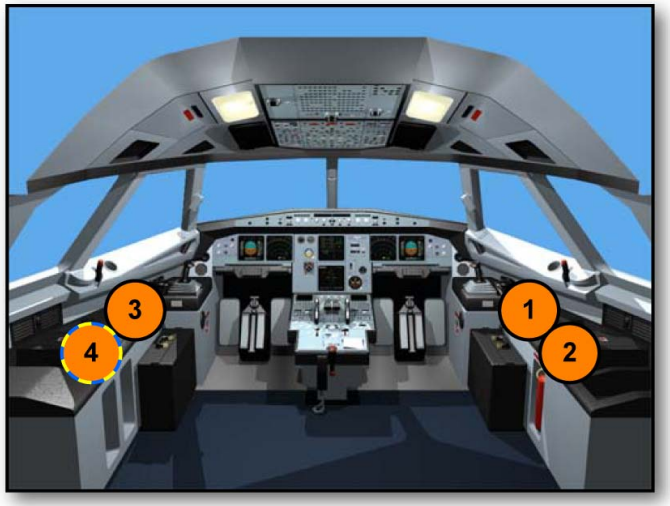
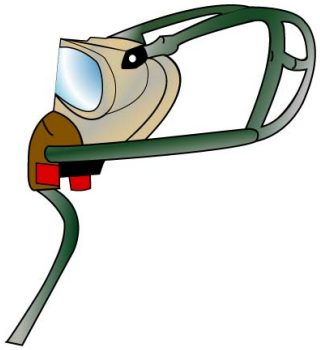
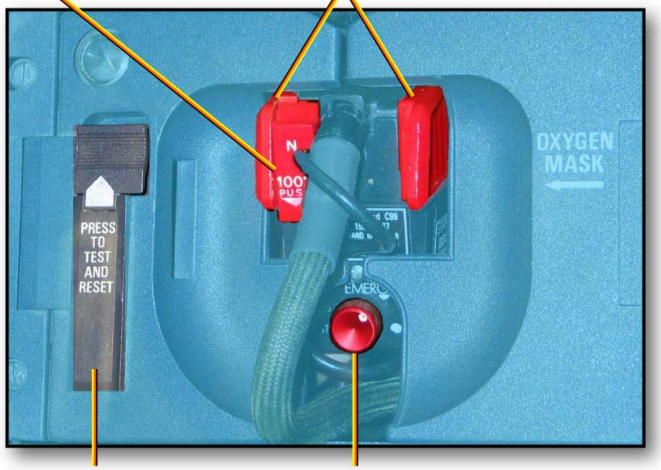
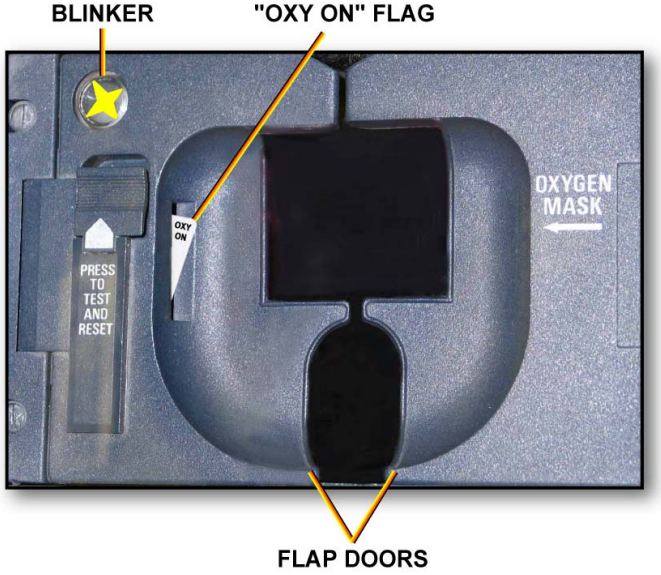
TESTS





4 OPTIONAL WITH THE 4TH OCCUPANT SEAT





TESTS

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PASSENGER OXYGEN UNIT D/O (3)

MASK OPERATION

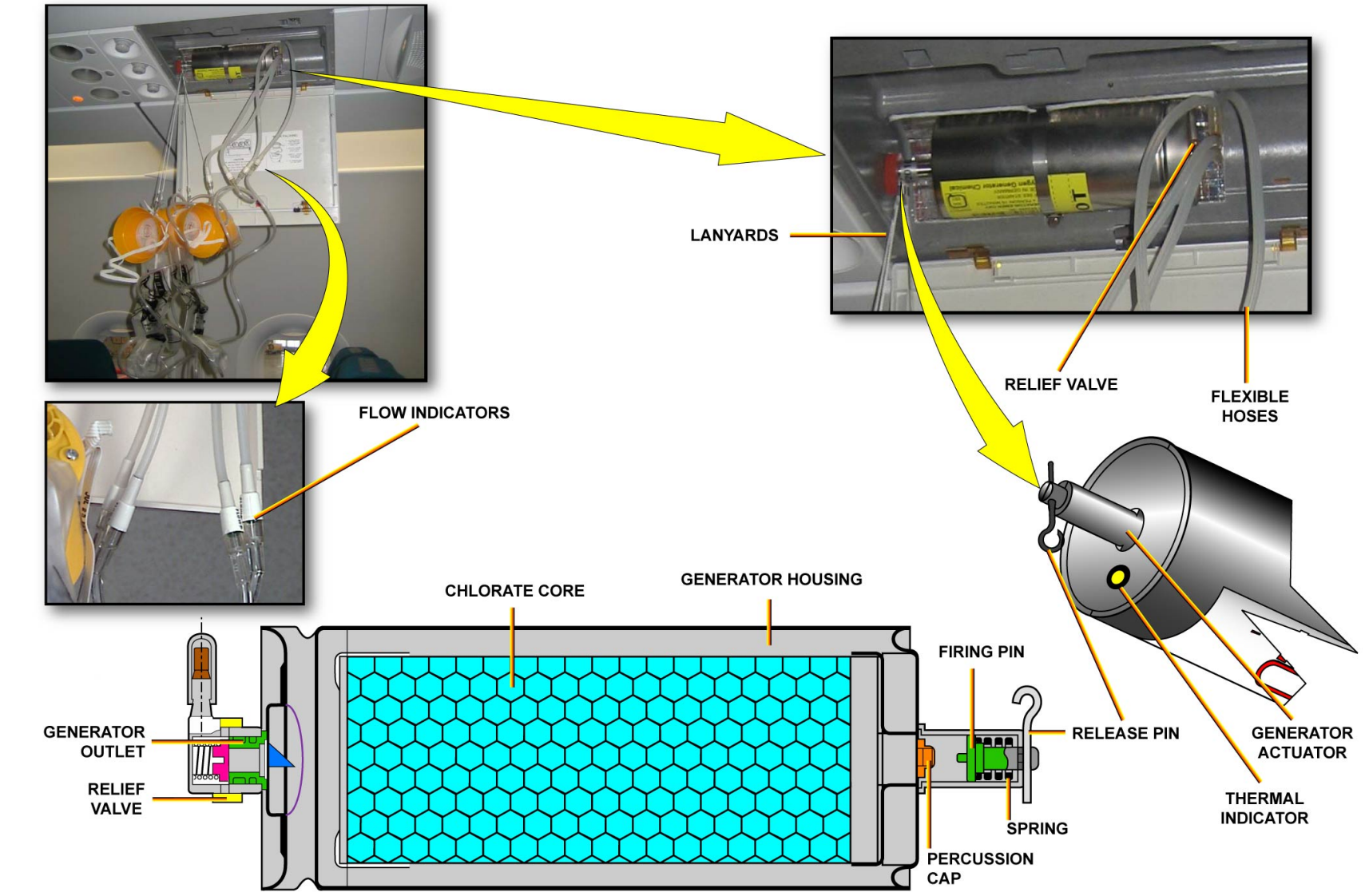
As soon as the emergency oxygen container doors open, the masks fall out. They are hung on lanyards within the reach of users. When the first user pulls the mask towards his face, the release pin starts the chemical generation. Oxygen flows through the flexible supply hoses to all masks of the container. Each flow indicator shows a green stripe.

CHEMICAL OXYGEN GENERATION

The chemical generator uses the basic principal of thermal decomposition of sodium chlorate.
A thermal indicator shows the generator condition. According to the generator type, there can be two different indicators:
1- Black: the oxygen generator has been burned out.
- Yellow: the oxygen generator is new.
2- Blue: the oxygen generator has been burned out.
- Pink: the oxygen generator is new.
The chlorate core is fitted in a stainless steel housing.

GENERATOR OPERATION

By pulling the release pin of the starter assembly the spring loaded firing pin will hit the percussion cap. The heat produced in the percussion cap will then activate the starting powder of the generator.



MASK OPERATION ... GENERATOR OPERATION

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

GENERAL SYSTEM DESCRIPTION

The passenger gaseous oxygen system supplies oxygen to each oxygen container in case of an emergency. The rate of the oxygen flow depends on the altitude. The oxygen supply starts automatically at a cabin pressure equivalent to an altitude exceeding 14.000 ft (4.265 m) and stops when the cabin pressure drops below a pressure equivalent to 10.000 ft (3.050 m). The system can than be re-started if the aircraft has to climb to clear another obstacle. The gaseous oxygen system has no characteristic flight profile. Since the flow is greater with the altitude, the lower the flight is done the longer the oxygen supply lasts.
High-pressure oxygen is stored in oxygen cylinder assemblies installed behind sidewall linings RH in the bulk cargo compartment. The standard system has 6 oxygen cylinders. Up to 8 oxygen cylinders can be installed on airline request. When the system is operated, low-pressure oxygen from the pressure regulators is supplied to the two Main Distribution Lines (MDLs). One line is installed below the cabin floor along the LH side of the aircraft. The other line is installed above the cabin ceiling. Riser Lines (RLs) are connected to the MDLs to supply oxygen to the hat rack lines. The hat rack lines supply oxygen to the oxygen containers.

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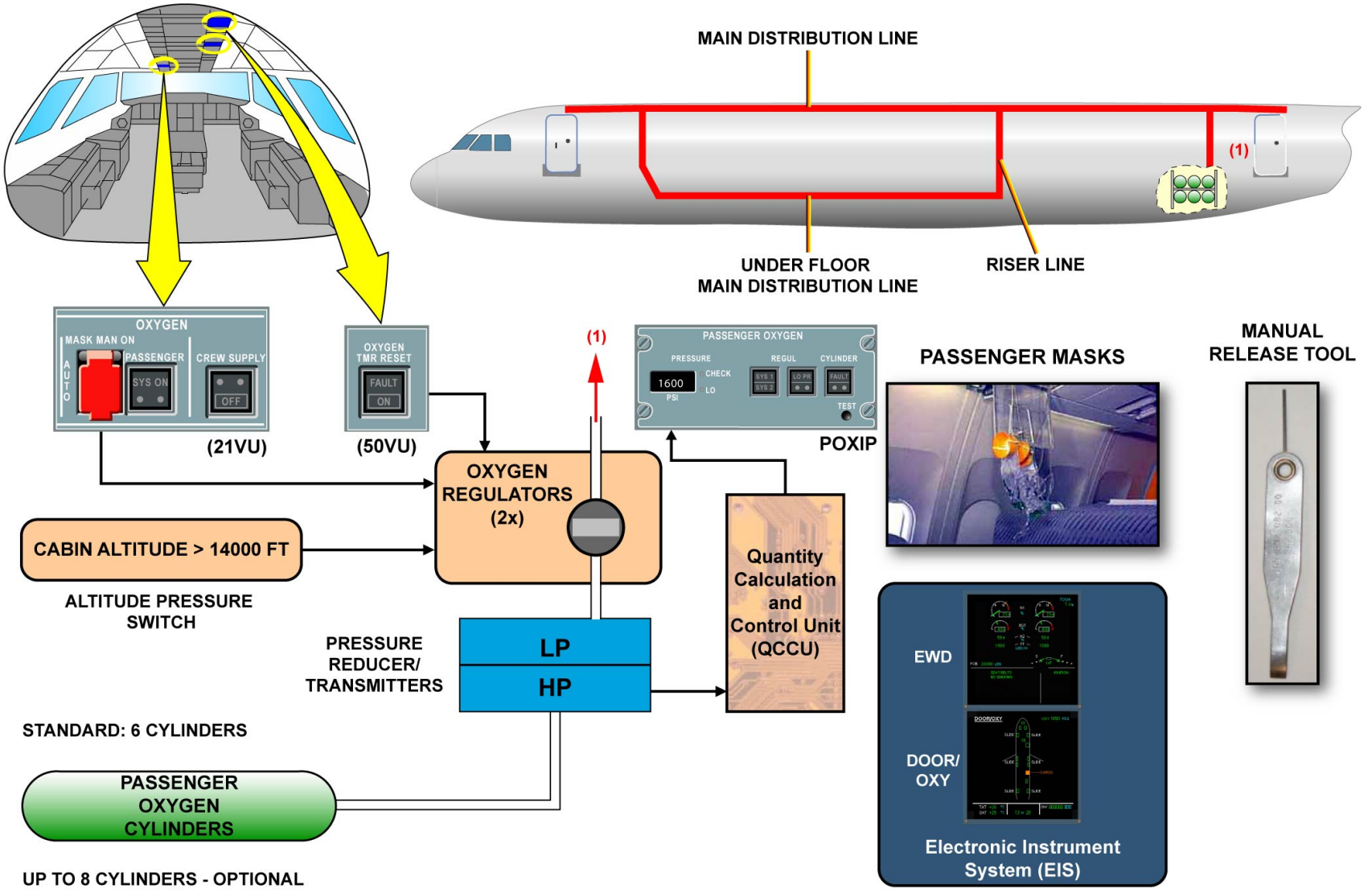

GENERAL SYSTEM DESCRIPTION

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

PASSENGER OXYGEN SYSTEM STORAGE

OXYGEN CYLINDER ASSEMBLY

The high-pressure oxygen cylinder is made of carbon fibres wrapped around an aluminium inner liner. It has the capacity of 3310 liter (116.9 cuft) at a pressure of 127.5 bar (1850 psig).
The cylinder head valve assembly is made of:
- a slow-opening Shutoff Valve (SOV) with an integrated reed switch sensor for closed/open identification,
- a direct-reading pressure gage,
- a high-pressure safety outlet with a burst disc,
- an inlet/outlet port.

To protect the cylinder from overpressure, the oxygen cylinder has a high-pressure safety outlet with a burst disc. The burst disc will rupture at a pressure of 169 bar (2451 psig) at a temperature of 71 °C (160 °F) and 191 bar (2770 psig) at a temperature of 21 °C (70°F).

OVERBOARD DISCHARGE INDICATOR

The overboard discharge indicator makes a continuous surface with the outside skin of the aircraft. It has a fluorescent green burst disk and a yellow housing. The burst disk of each oxygen cylinder and the safety outlet of the pressure relief valve are connected via the overboard discharge line with the overboard discharge indicator. In case of overpressure in the higher part or in the intermediate pressure part, the green burst disk is blown out and a reflective yellow area of the discharge indicator is shown.

OXYGEN PRESSURE REDUCER

The oxygen pressure reducer transmitter assembly is directly connected to the inlet/outlet port of the oxygen cylinder assembly and reduces the cylinder pressure to the intermediate pressure of 7.6 ± 0.7 bar (110 ± 10 psig). The outlet of the oxygen pressure reducer is connected with the intermediate pressure line.

THERMAL COMPENSATORS

The thermal compensators prevent dangerous increases of temperature during replenishment of oxygen cylinder. They are installed in the high-pressure line (fill line) immediately in front of the pressure reducers.

TEMPERATURE TRANSDUCER

The temperature transducer measures the ambient temperature in the installation area of oxygen cylinders and generates a related electrical signal sent to the Quantity Calculation and Control Unit (QCCU) for the computation.

PRESSURE RELIEF VALVE

A pressure relief valve is installed between the intermediate pressure line and the overboard discharge line. It is a double redundant safety valve. The inlet port of the pressure relief valve is connected with the intermediate pressure line. If the pressure in the intermediate pressure line exceeds 9.7 ± 0.7 bar (140 ± 10 psig), the valves will open. The overpressure can then discharge via the overboard discharge line. The relief valve closes when the pressure decreases below 8.3 bar (120 psig). For redundancy functions, two valves are arranged in series to prevent system pressure loss if one valve fails to close. Two serial valve devices are arranged in parallel.

OXYGEN FILLING PORT

The oxygen filling port enables the connection of an oxygen ground filling equipment for cylinders replenishing. The oxygen filling port has:
- a flow restrictor to make sure safe pressure rises,
- a filter to prevent contamination of the system,
- an external cap with a safety chain.

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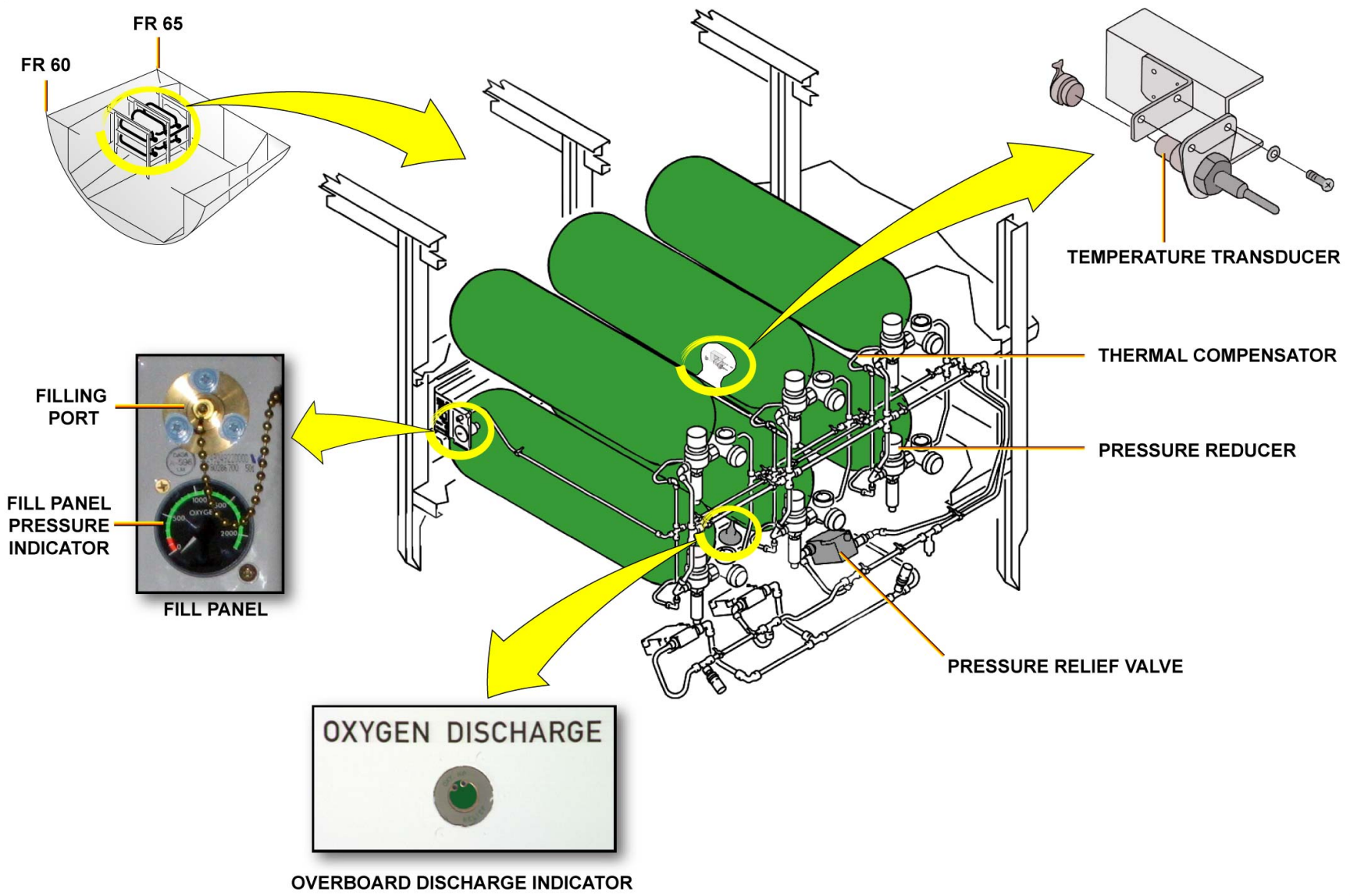

PASSENGER OXYGEN SYSTEM STORAGE - OXYGEN CYLINDER ASSEMBLY ... OXYGEN FILLING PORT

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

PASSENGER OXYGEN SYSTEM DISTRIBUTION

GENERAL

The oxygen distribution lines enable the supply of the oxygen from the oxygen cylinders in the bulk cargo compartment to the cabin. The low-pressure oxygen is supplied to the two MDLs. At the FR47/51, the MDL is split in two: One line is installed below the cabin floor along the LH side of the aircraft and the other line is installed above the cabin ceiling. The two MDL are joined again at FR 26. The area where the MDLs are doubled is the engine burst area. Riser lines are connected to the MDL's at approximately every 4 fuselage frames to supply oxygen to the hatrack supply lines and to the oxygen containers.

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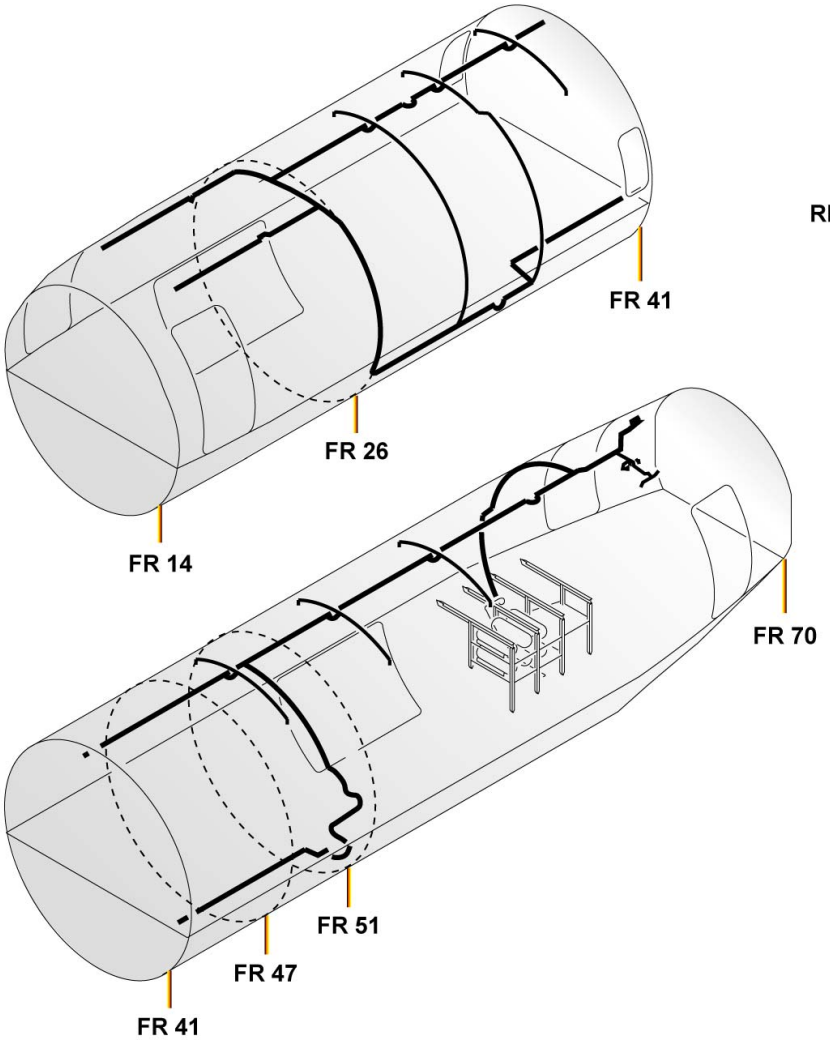

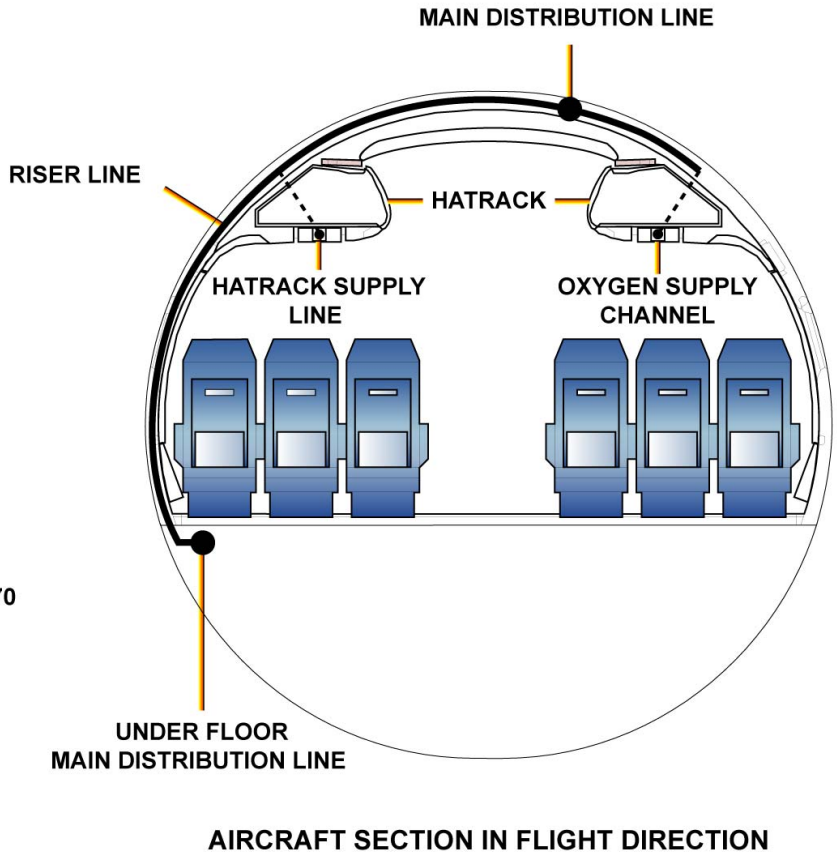

PASSENGER OXYGEN SYSTEM DISTRIBUTION - GENERAL

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

PASSENGER OXYGEN SYSTEM DISTRIBUTION (continued)

INTERMEDIATE LINE LOW PRESSURE SWITCH

The low-pressure switch is installed in the intermediate pressure line between the pressure reducers and the oxygen regulators. If the pressure in the intermediate pressure line is not sufficient, the low-pressure switch generates a warning signal on the Passenger Oxygen Indication Panel (POXIP) in the cockpit overhead panel. The decreasing pressure is 6.9 bar (100 psi) and the increasing pressure is 5.5 ± 0.7 bar (80±10 psi).

PRESSURE OXYGEN REGULATORS

Two redundant Pressure Oxygen Regulators (PORs) are installed in the intermediate pressure line. Each regulator operates the system independently from the other. The POR integrates a motor driven SOV. At first the POR integrated motor driven SOV is fully opened for approximately 6-9 seconds to surge the MDL. After the surging, the POR measures the ambient pressure (determining cabin altitude) and the pressure in the MDL just downstream of the POR through integrated pressure sensors. The POR compares the pressure in the MDL to the required pressure (depending on cabin altitude) using analogue circuits. The motor driven SOV moves to the position necessary to obtain the correct pressure in the MDL thus supplying the correct flow to the oxygen masks.

TEST PORTS

The system has three test ports. One is installed in the intermediate pressure line and the other two are installed in the low-pressure distribution network. These test ports are used for the connection of test tool for leakage, pressure tests, system function, and pressure release of the distribution network.

The cap of the test port installed in the oxygen distribution system downstream of the oxygen regulators has a bleed/vent function. Together with the bleed/vent valve it allows a sufficient equalization of pressure between the oxygen distribution system and the cabin pressure. This prevents the 'SYS ON' indicator light to come on accidentally when the cabin altitude pressure changes.

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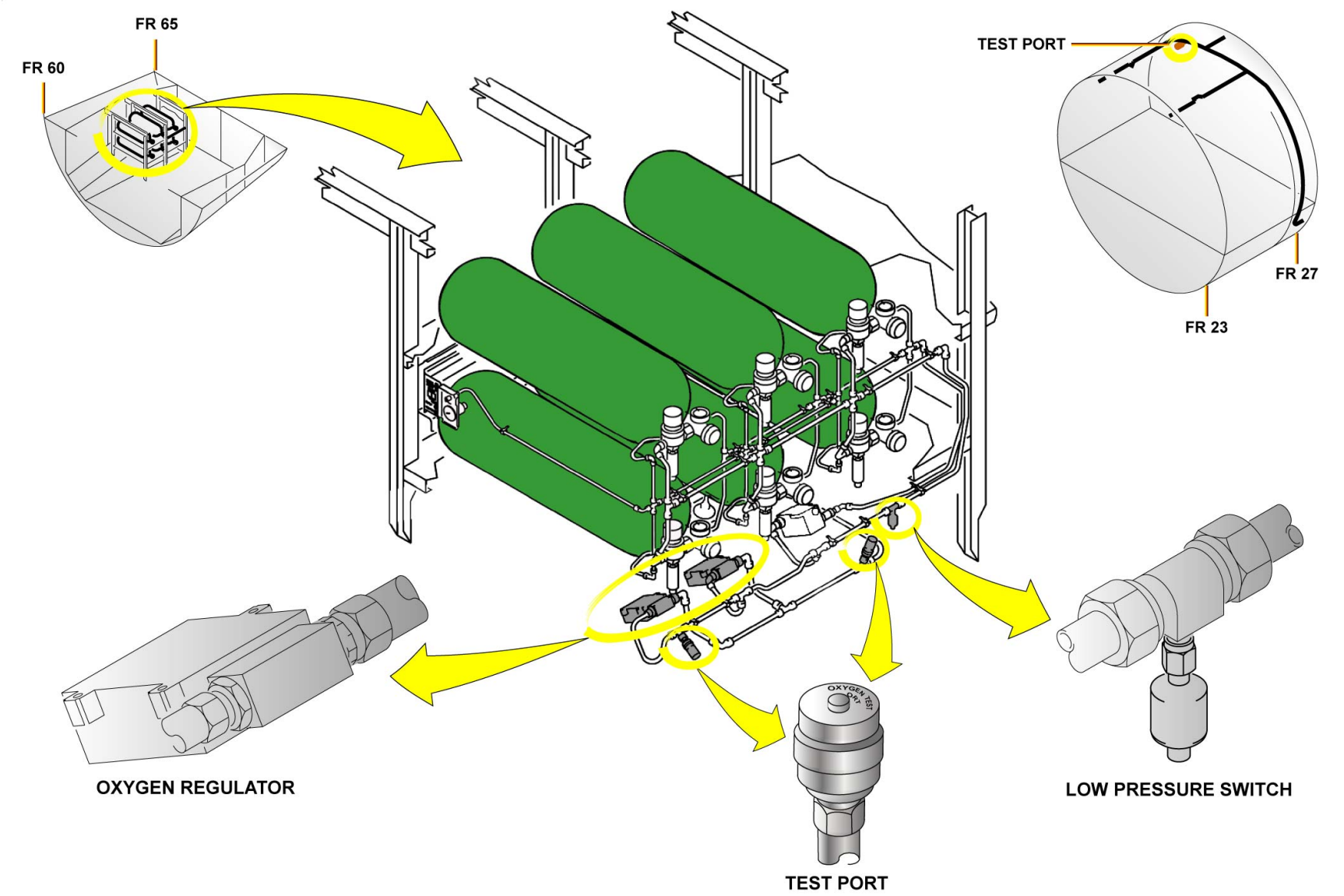

PASSENGER OXYGEN SYSTEM DISTRIBUTION - INTERMEDIATE LINE LOW PRESSURE SWITCH ... TEST PORTS

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

PASSENGER OXYGEN SYSTEM DISTRIBUTION (continued)

BLEED/VENT VALVE

The bleed vent valve is installed at the most FWD point of MDL located in the ceiling. After system activation, the valve opens for approximately 15 to 25 seconds to let the air/oxygen mixture contained in the distribution network be released out of the MDLs and the system is purged. The bleed vent valve contains an orifice, which lets a small amount of oxygen escape from the distribution system. The bleed vent valve also contains a filter protecting the oxygen system from contamination.

MDL SHUTOFF VALVES

The system has two MDLs SOVs, which are pneumatically controlled. One MDL SOV is installed in the ceiling MDL just AFT of the rim release area. The other MDL SOV is installed in the under floor MDL just AFT of the rim release area. During normal system operation both MDL SOVs are open in flow direction. There are also RL SOVs installed in the engine burst area and the rim release area. They are installed immediately after the connection with the main supply line. In normal operation, the riser line SOVs are open. If a riser line is damaged, the riser line SOV closes automatically.

RL CHECK VALVES

The system has two check valves installed. One check valve is installed in the ceiling MDL just FWD of the engine burst area. The other check valve is installed in the under floor MDL just FWD of the engine burst area. In normal operation, the check valves are open. When a main line is damaged due to uncontained engine rotor failure or rim release, the check valve closes.

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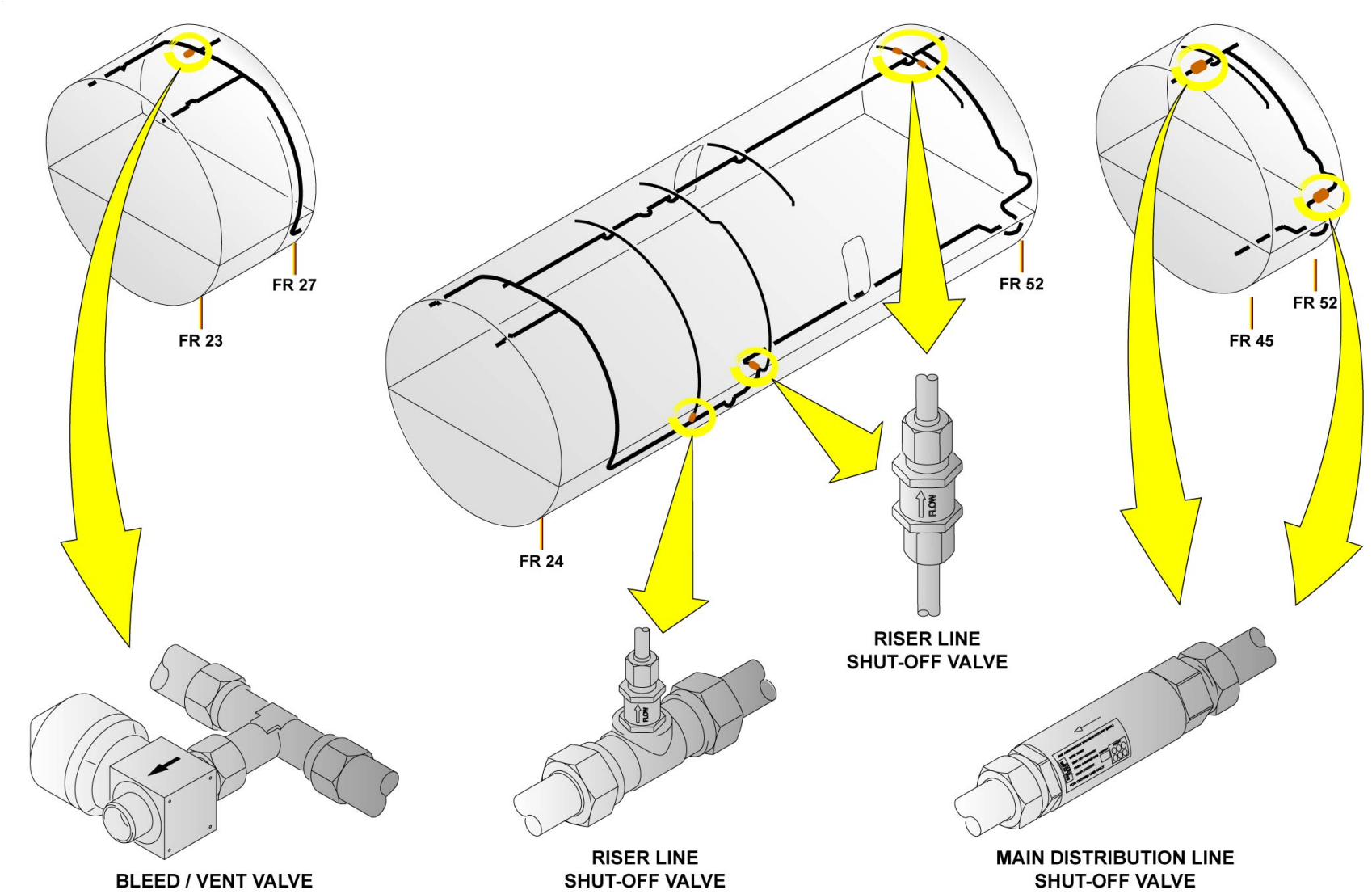

PASSENGER OXYGEN SYSTEM DISTRIBUTION - BLEED/VENT VALVE ... RL CHECK VALVES

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

SYSTEM ACTIVATION AND RESET

AUTOMATIC MODE

When the cabin pressure decreases to a pressure equivalent to 14.000 ft + 250/-750 ft (4.265 m) the altitude switch closes. This starts the automatic operation of the oxygen system. The Pressure Oxygen Regulators (PORs) open fully to purge the Main Distribution Line (MDL), measure the cabin altitude of the A/C and the pressure in the distribution network. The POR adjusts the pressure in the distribution line to the required oxygen pressure in order to obtain the correct flow. The POR does not require any software.

MANUAL MODE

If the altitude SW fails, the MASK MANual ON P/B can be pushed at any time to start the operation of the oxygen system. The MASK MAN ON P/B sends a signal to open the PORs. POR operation is the same as in automatic mode.

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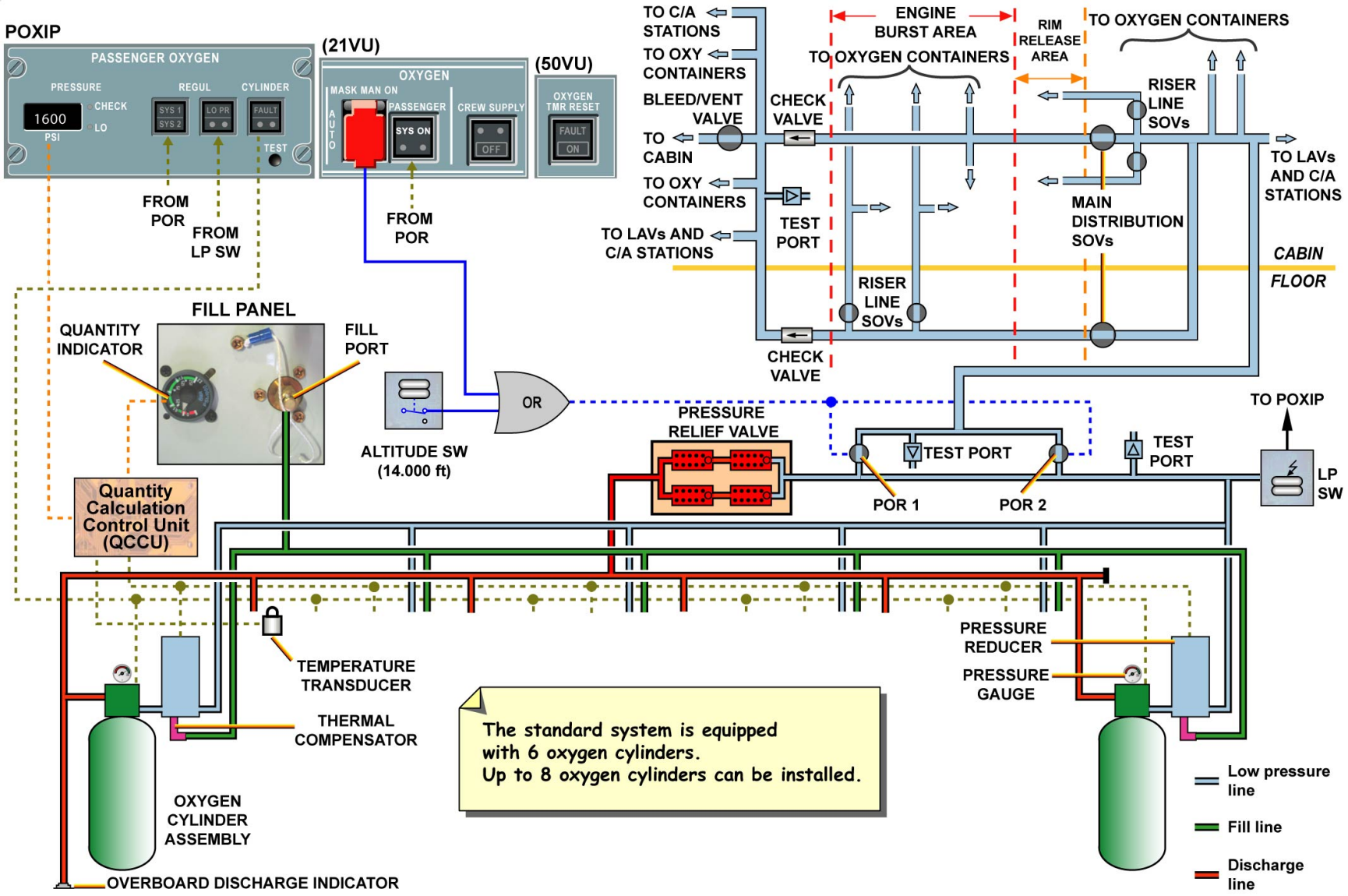

SYSTEM ACTIVATION AND RESET - AUTOMATIC MODE & MANUAL MODE

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

SYSTEM ACTIVATION AND RESET (continued)

SYSTEM OPERATION

After system activation in either Automatic or Manual mode, the bleed/vent valve first bleeds the remaining air in the lines and then closes to let the system fill with oxygen. The SYStem ON light comes on as soon as one POR is open. An emergency announcement is transmitted over the passenger address system. The oxygen masks container doors open pneumatically and the masks fall. Oxygen only flows to the masks, which are pulled down.

RESET

The OXYGEN TiMeR RESET P/BSW is used to reset the electrical circuit after the system operation. When the OXYGEN TMR RESET P/BSW is pushed and the cabin altitude is less than 10000 ft, the oxygen regulators will close and the SYS ON indication will turn off when the pressure in the distribution system decreases below 4,5 ± 0,5 kPa (0,045 ± 0,005 bar).

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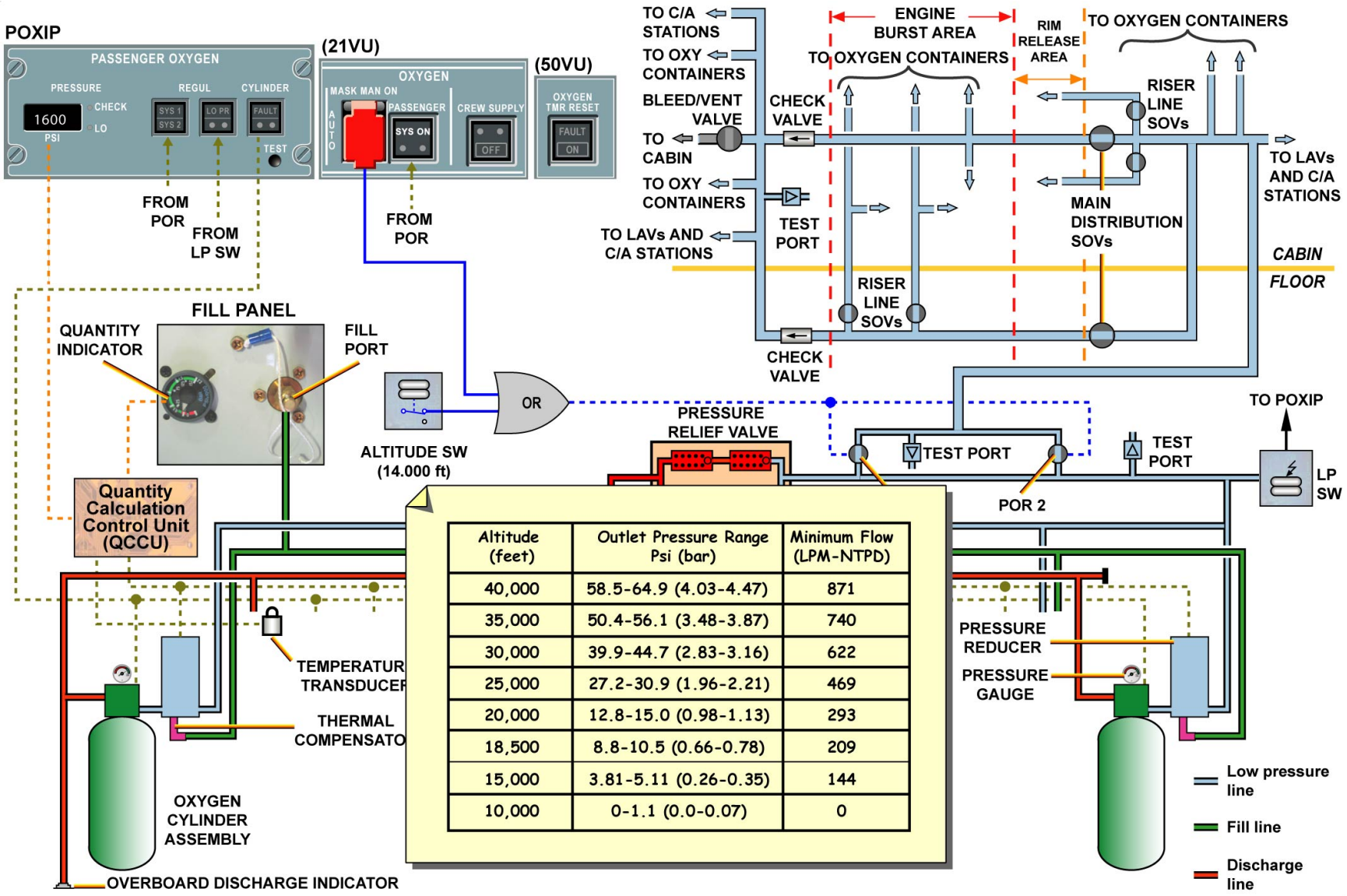

Altitude (feet)	Outlet Pressure Range Psi (bar)	Minimum Flow (LPM-NTPD)
40,000	58.5-64.9 (4.03-4.47)	871
35,000	50.4-56.1 (3.48-3.87)	740
30,000	39.9-44.7 (2.83-3.16)	622
25,000	27.2-30.9 (1.96-2.21)	469
20,000	12.8-15.0 (0.98-1.13)	293
18,500	8.8-10.5 (0.66-0.78)	209
15,000	3.81-5.11 (0.26-0.35)	144
10,000	0-1.1 (0.0-0.07)	0

SYSTEM ACTIVATION AND RESET - SYSTEM OPERATION & RESET

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

ENGINE BURST / RIM RELEASE PROTECTION

DAMAGE TO MAIN DISTRIBUTION LINE

In case of damage to a part of the MDL due to engine burst failure or rim release, the surge flow in the damaged MDL part will induce the SOV in the damaged part of the MDL to close. The reverse flow check valve on the damaged part of the MDL will also close in order to seal the damaged area.
The surge pressure increases and when the door latch actuation pressure (1.5 bar - 3.0 bar) is reached, the doors of the oxygen container assemblies supplied by the undamaged part of the MDL will be released.

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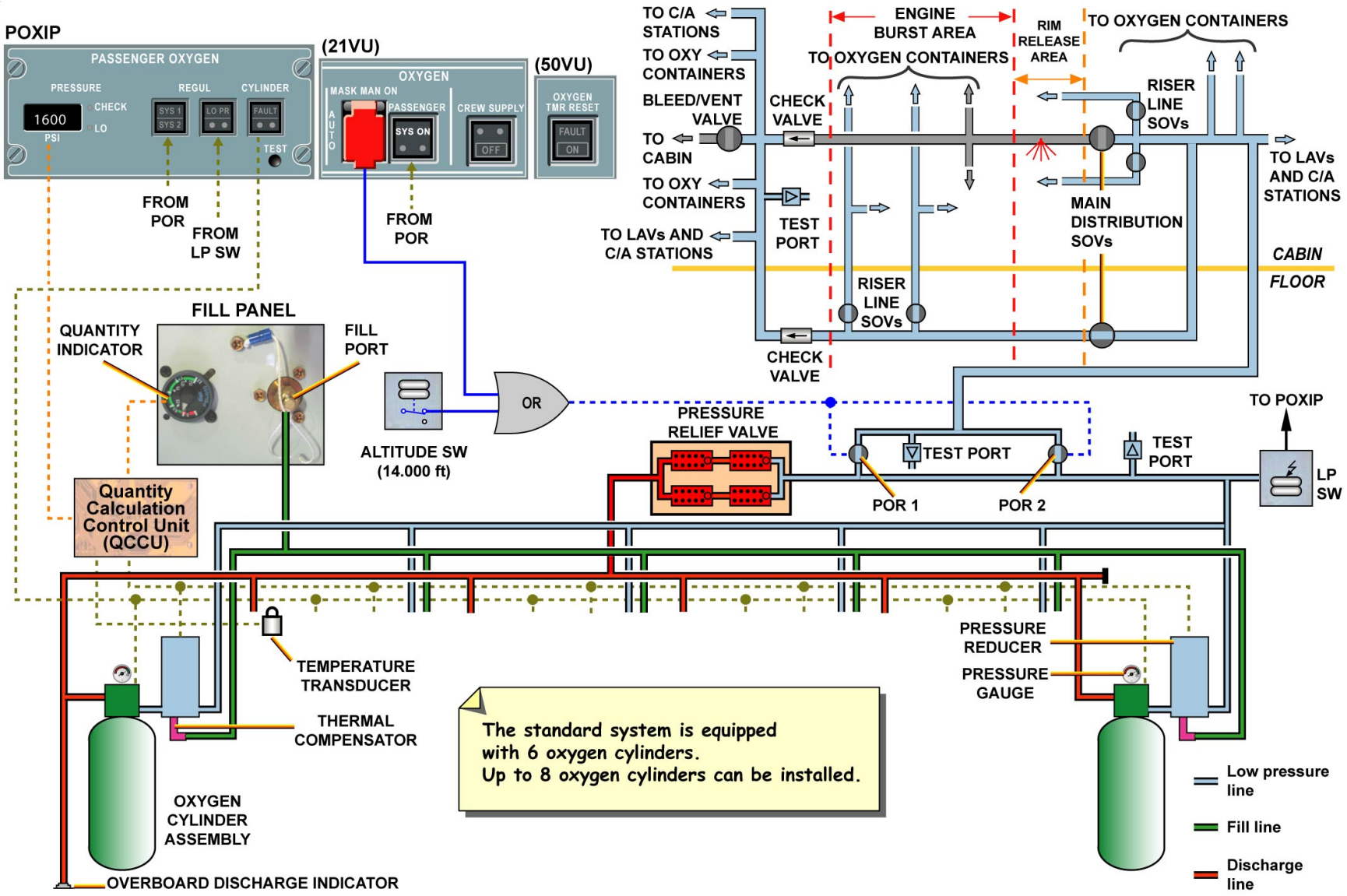

ENGINE BURST / RIM RELEASE PROTECTION - DAMAGE TO MAIN DISTRIBUTION LINE

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PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

ENGINE BURST / RIM RELEASE PROTECTION (continued)

DAMAGE TO RISER LINE

In case of damage to a RL due to engine burst failure or rim release, the surge flow in the damaged RL part will induce the SOV in the RL to close.

The surge pressure increases and when the door latch actuation pressure (1.5 bar - 3.0 bar) is reached, the doors of the oxygen container will be released (except the doors of the oxygen containers in the damaged RL).

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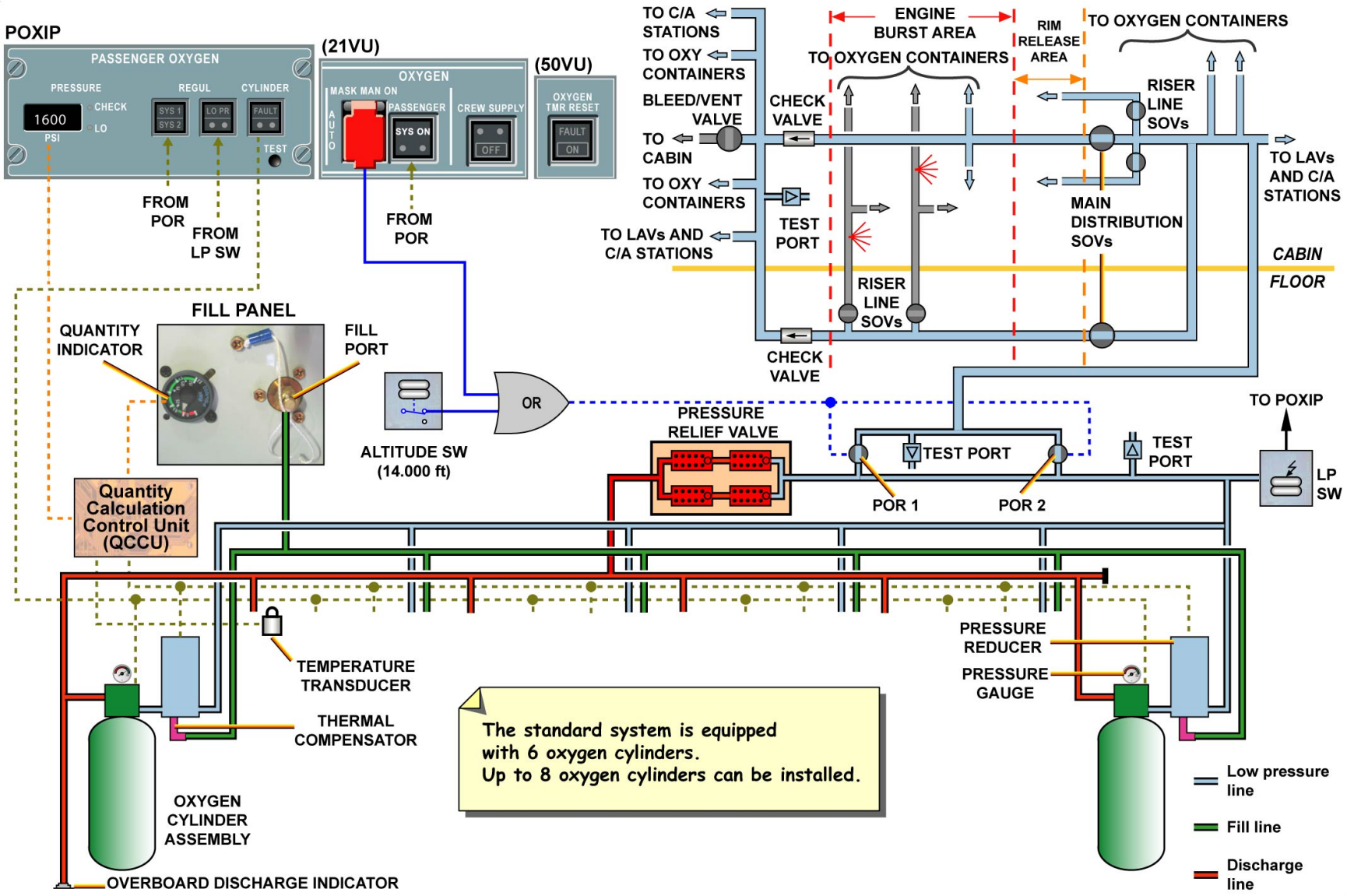

ENGINE BURST / RIM RELEASE PROTECTION - DAMAGE TO RISER LINE

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PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

PASSENGER OXYGEN CONTAINER ASSEMBLIES

There are different oxygen container assemblies for the different installation places in the aircraft cabin. These assemblies are different in length and width. Each type of container can have different numbers of masks. For each mask, there is a flow restrictor and a SOV activated automatically by a lanyard. To carry out the interface requirements of the aircraft the following different oxygen container types are required:
- type I installed in the overhead stowage PSU channels to supply 2 to 4 persons with oxygen (LH and RH container),
- type II installed in sidewalls, ceilings, lavatories and galleys to supply 2 persons with oxygen.

An oxygen container assembly is mainly composed of:
- a container housing,
- a container door (spring loaded for type II, type I not spring loaded),
- a door stop/test button device,
- an inlet port inclusive filter,
- a pneumatic door latch including a lever for manual opening,
- a manifold with individual outlets having SOV integrated for each mask connection,
- an oxygen mask assembly,
- a flow indicator for each oxygen mask,
- a distribution tube from inlet port to manifold and to the pneumatic door latch,
- a lanyard to activate the flow to each individual mask.

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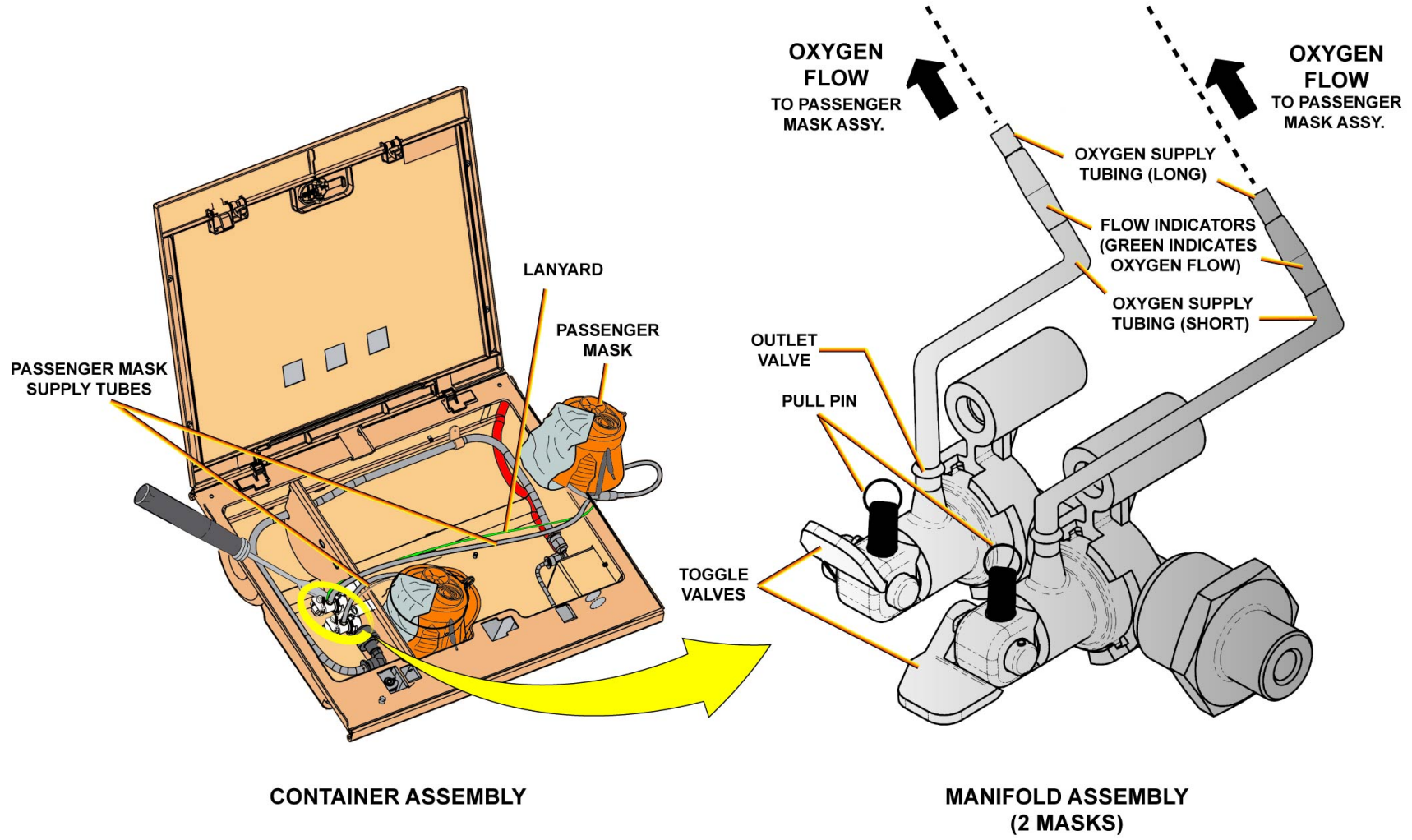


PASSENGER OXYGEN CONTAINER ASSEMBLIES

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

CONTROL & INDICATION

GENERAL

Altitude Pressure Switch

The altitude switch, which is installed in the avionics compartment, starts the automatic operation of the passenger oxygen system. It sends a signal to open the oxygen regulators, which supply low-pressure oxygen to the oxygen distribution system. In case of high altitude airfield operation option, the altitude switch has two settings:

- the first setting closes, if the pressure falls to a value equivalent to 14000 +250/ -750 ft. (4267.12 +76,2/ -228,6 m),
- the second setting closes, if the pressure falls to a value equivalent to 16000 +250/ -750 ft. (4876.71 +76,2/ -228,6 m).

NOTE: If high altitude airfield operation is required, the system can be adapted by using a dual altitude pressure switch and by adapting the activation circuit.

Oxygen Control Panel

On the oxygen control panel, the MASK MAN ON P/BSW allows the crew to activate the oxygen system as a backup and override the altitude pressure switch. The oxygen regulators stay open even if the MASK MAN ON P/BSW is released. When the OPEN relays do not operate, it is necessary to hold the MASK MAN ON P/BSW for 1 second to open the oxygen regulators.

A safety guard is installed over the MASK MAN ON P/BSW to prevent accidental operation of the system. The SYS ON indicator light on the overhead panel comes on when at least one pressure oxygen regulator is open. When the pressure in the system decreases the SYS ON indicator light goes off.

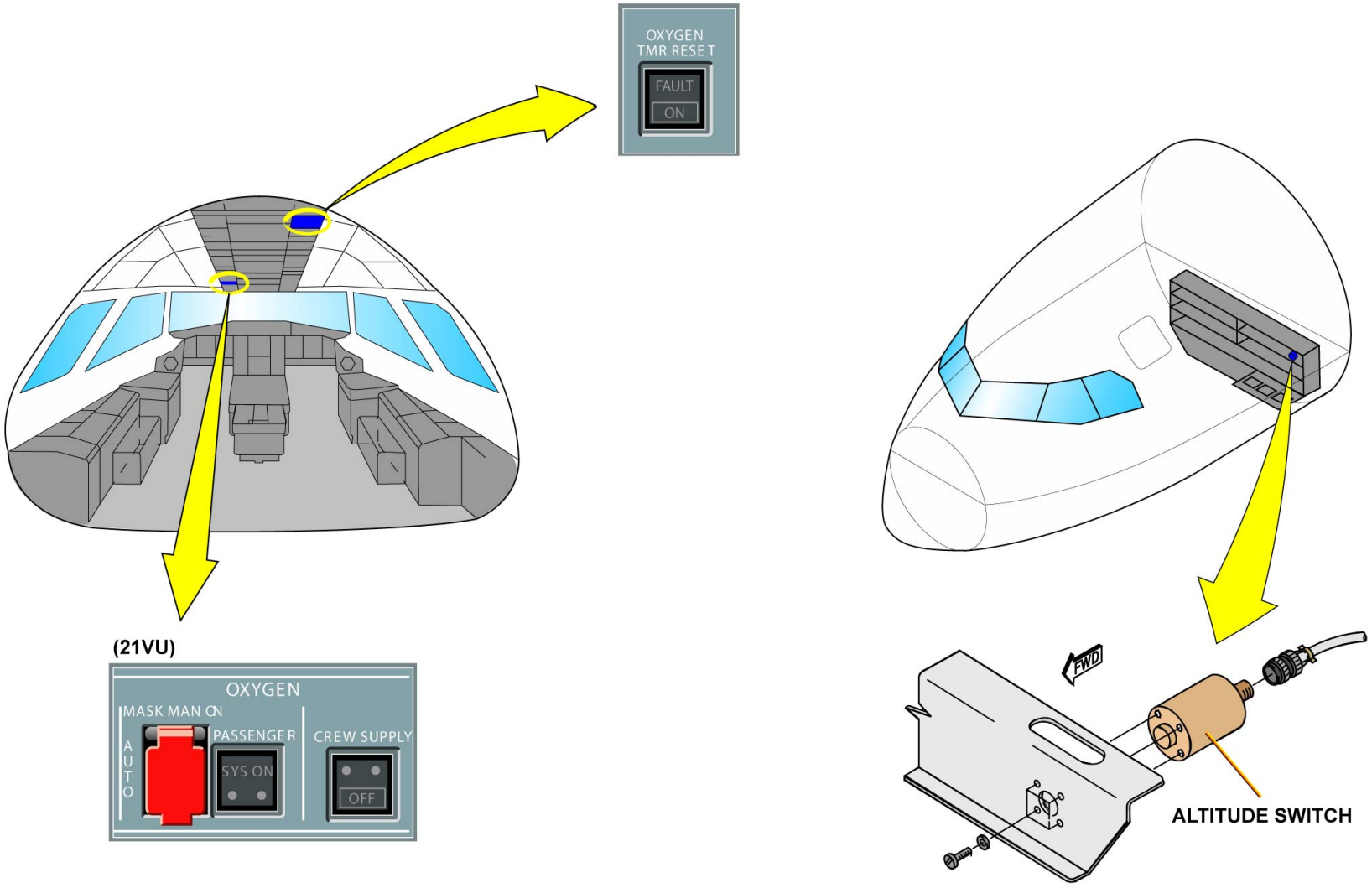
TMR RESET P/B

The TMR RESET P/BSW is installed on the maintenance panel and is used to reset the controls after the system operation. When the TMR RESET P/BSW is pushed:

- the electrical circuit is set to the normal condition,
- the oxygen regulators close.

In this case the ON light comes on and stays on for 5 seconds. It does not go off if the electrical circuit for the oxygen system does not reset to the correct condition.

UGB13131 - U7ST0M0 - UM35D6000000001



CONTROL & INDICATION - GENERAL

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

CONTROL & INDICATION (continued)

PASSENGER OXYGEN INDICATION PANEL

The monitoring of the gaseous oxygen system has indications and warnings, which are displayed to the cockpit crew on the Passenger Oxygen Indication Panel (POXIP) and by a white PASSENGER SYS ON light. As additional attention getters, separate lights are placed next to the cylinder pressure display. These lights will be switched on, in case the cylinder pressure decreases below some values. Maintenance messages cannot be recorded automatically, since no maintenance computer will be installed. Failures requiring maintenance activity will have to be noted by the flight crew, some failure messages will be displayed on the Quantity Calculation and Control Unit (QCCU) itself.

Indication of Filling Pressure

Depending on the actual value of the analogue input from the QCCU, there are 4 different cases:

CASE 1: Fill Pressure 1600 PSI

Pressure value indication displayed in BLACK / WHITE.
In this case the required system performance is available.

CASE 2: 1600 PSI > Fill Pressure 200 PSI

Pressure value indication displayed in BLACK / WHITE.
CHECK light on in AMBER.
In this case the crew must refer to the Flight Crew Operating Manual (FCOM) to determine the remaining system performance (descent profile) depending on the number of passengers and the flight plan.

CASE 3: Fill Pressure < 200 PSI

Pressure value indication displayed in BLACK / WHITE.
CHECK light on in AMBER.
LO light on in AMBER.
In this case the oxygen cylinders are empty which leads to a NO GO if there are passengers on board.

CASE 4: Fill Pressure not available or out of range

Pressure value indication replaced by "- -" in BLACK / WHITE (class 1 failure).
The crew must refer to the Master Minimum Equipment List (MMEL) to determine the procedures and actions to accomplish when operating with the pressure indication inoperative. In this case, the oxygen pressure has to be checked by direct reading before each flight.

Indication of Failures
QCCU, Pressure and Temperature Transducer

Failure of QCCU and/or Pressure Transducer and/or Temperature transducer.
Pressure value indication are replaced by "--" in BLACK / WHITE.
Indication by a light on the QCCU itself.
The crew must refer to the MMEL to determine the procedures and actions to accomplish when operating with the pressure indication inoperative. In this case, the oxygen pressure has to be checked by direct reading before each flight.

Hand Valves on Oxygen Cylinder

One or more hand valves of the passenger oxygen cylinders are closed.
Flight phase inhibition 3-9 required using "engine running" signal.
CYLINDER FAULT light on in AMBER (class 1 failure).

System Pressure Intermediate Line

The failure is shown if the system activated mode and stand by mode: System pressure downstream of pressure reducers is too low or in case of low pressure switch failure.
REGUL LO PR light ON in AMBER (class 1 failure).

Pressure Oxygen Regulator

System stand by mode: One or both pressure oxygen regulators are not fully closed.
- REGUL SYS1 and/or REGUL SYS2 light on in AMBER (class 1 failure).
- SYS ON light on
System activated and system stand by mode: One or both pressure regulators have a power loss.
- REGUL SYS1 and/or REGUL SYS2 light on in AMBER (class 1 failure).
System activated mode: One or both pressure regulators are closed.
- REGUL SYS1 and/or REGUL SYS2 light on in AMBER (class 1 failure).

Circuit Breaker

The failure is when the circuit breaker for regulator is not activated: REGUL SYS1 and/or REGUL SYS2 light on in AMBER (class 1 failure).

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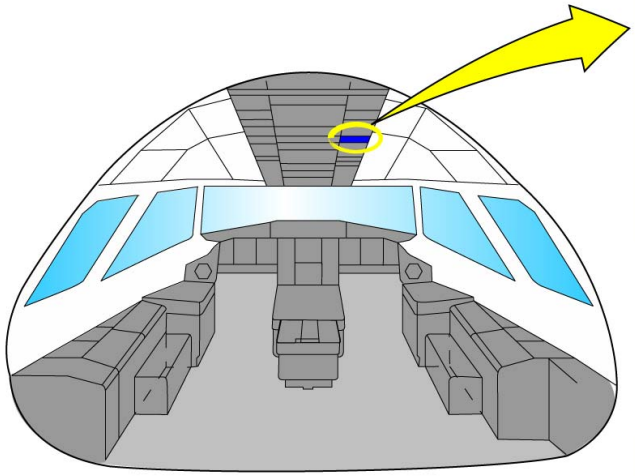
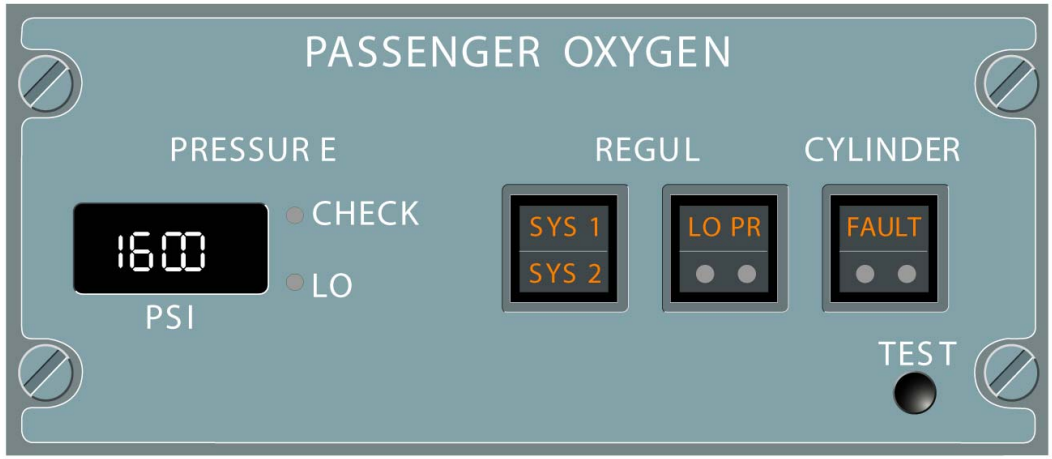
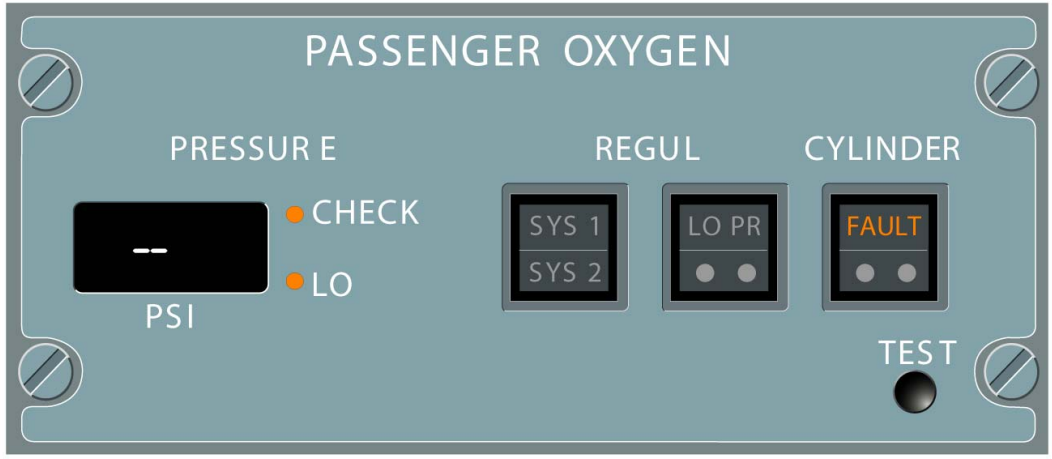




PASSENGER OXYGEN INDICATION PANEL (POXIP)



CONTROL & INDICATION - PASSENGER OXYGEN INDICATION PANEL

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PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

CONTROL & INDICATION (continued)

QCCU

The QCCU monitors the oxygen pressure in the installed oxygen cylinders. The QCCU receives signals from:
- the pressure transmitters integrated in each pressure reducer,
- the temperature transducer.

The QCCU sends a signal of the arithmetic average pressure of the installed oxygen cylinders to the fill panel indicator (non temperature compensated) and a temperature adjusted pressure to the POXIP. The QCCU also sends a signal to the POXIP if:
- the QCCU does not operate,
- the signal from the temperature transducer is out of range,
- the signals from the pressure transducers are out of range.

A "- -" instead of a pressure value will be displayed on the POXIP and the respective fault indication on the front of QCCU comes on.

QCCU Test

The QCCU test is done via the TEST P/B located on its front face. Before pushing this TEST P/B, turn the two switches on the QCCU until the correct number of oxygen cylinders installed in the aircraft comes on, on the QCCU display. If there is no QCCU indication, the TEST P/B can be pushed:
- the COMPUTER, TEMPERATURE and PRESSURE indicators come on,
- the QCCU displays the "88" indication.

After 3 seconds:
- the COMPUTER, TEMPERATURE and PRESSURE indicators go off,
- the QCCU displays the number of selected oxygen cylinders.

After 12 seconds, the number of selected oxygen cylinders on the QCCU display goes off.

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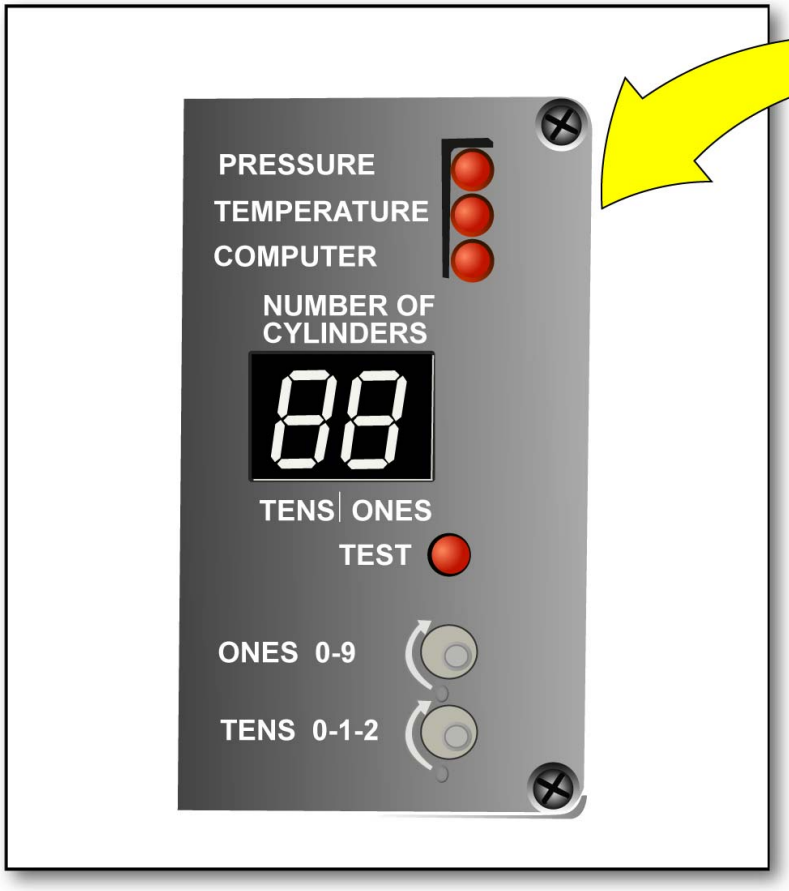
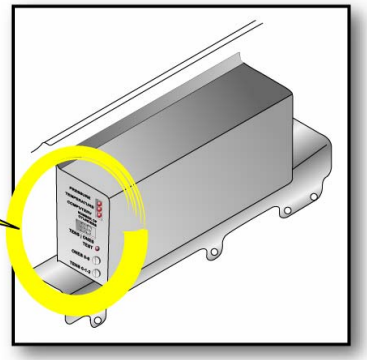


QCCU FRONT FACE



QUANTITY CALCULATION CONTROL UNIT (QCCU)

The QCCU has:

- A way to select the number of the installed oxygen cylinders,
- A way to display the number of oxygen cylinder selected,
- An indication to show fault conditions of the unit itself and related equipment e.g pressure reducers, temperature transducer,
- A way to test the indication of fault conditions and display.

CONTROL & INDICATION - QCCU

PASSENGER GASEOUS OXYGEN SYS D/O (OPTION) (3)

SERVICING

FILLING

Refilling of the cylinders is accomplished via the oxygen filling port. This port is installed on the oxygen fill panel and enables connection of an external oxygen source for replenishing of the oxygen cylinders. The correct filling pressure depends on the outside and the cargo compartment temperatures, and can be determined by the use of the aircraft placards. To check the correct fill pressure, you have to calculate the average pressure in the replenished oxygen cylinders. Make sure that the pressure on the fill panel pressure indicator is the same as the calculated average pressure in the oxygen cylinders. During filling, an increase in temperature in each cylinder is limited by a thermal compensator. The QCCU monitors the fill pressure in the cylinders and the pressure indication is displayed on the POXIP and on the indicator fill panel.

TEST PORT

The three test ports enable the maintenance crew to increase and decrease the pressure in the oxygen system during a functional check of the system. The first test port, which is installed in the intermediate line before the oxygen regulators, is used for different tests and checks of the oxygen system. The second test port, which is installed in the oxygen distribution system downstream of the oxygen regulators, is used for different tests and checks of the oxygen distribution system. The third test port, which is installed in the oxygen distribution system downstream of the check valves, lets you decrease the pressure of the supply lines downstream of the check valves. Before the depressurization of the system, it is necessary to close the manual SOVs of the oxygen cylinders.

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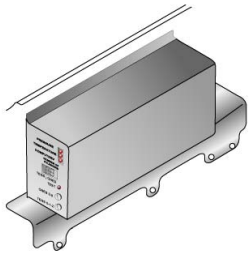
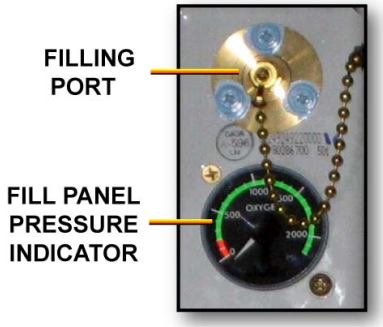
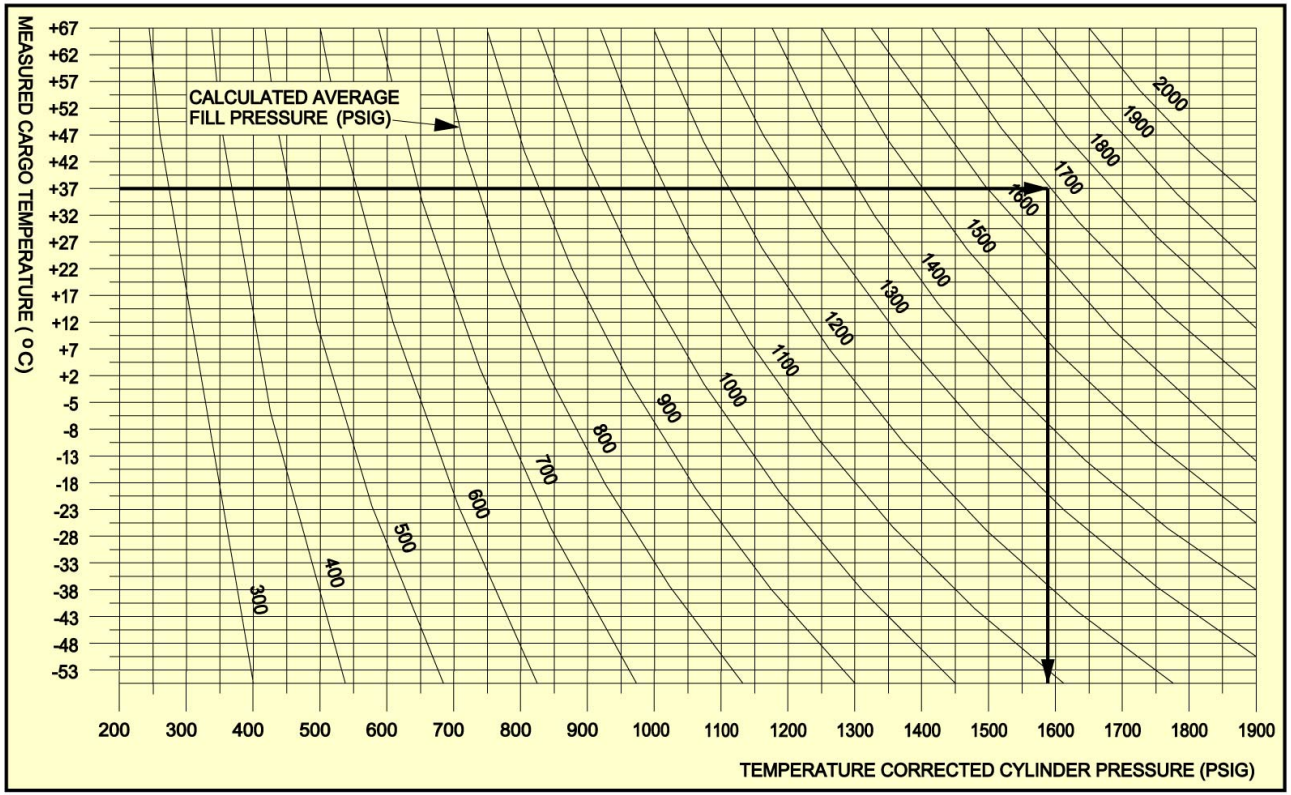
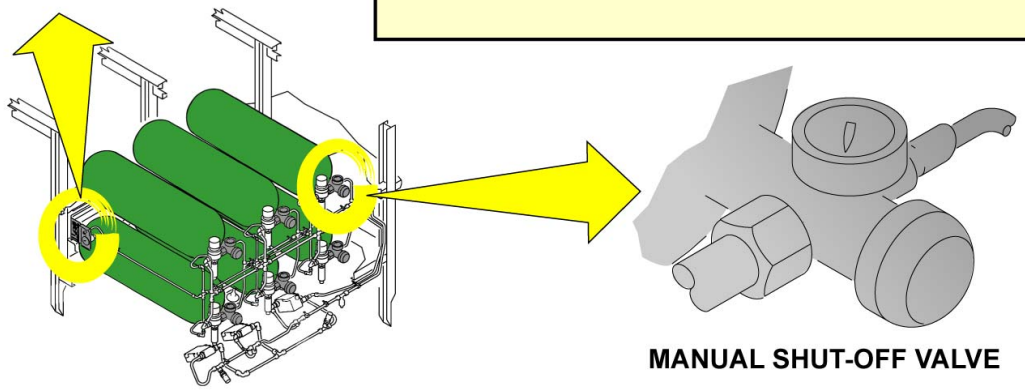


QUANTITY CALCULATION CONTROL UNIT (QCCU)



FILL PANEL





MANUAL SHUT-OFF VALVE

SERVICING - FILLING & TEST PORT

CREW PORTABLE OXYGEN SYSTEM D/O (3)

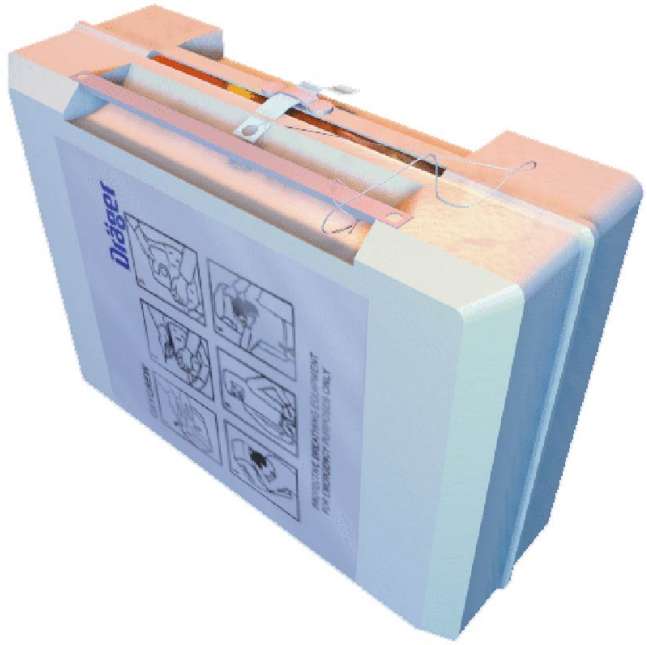
GENERAL

The portable breathing equipment (PBE) provides eyes protection and supplies oxygen to the crew member in case of emergency: fire, or an emission of smoke or noxious gases. The PBE allows freedom of movement to extinguish a fire.

LOCATION

The PBE is vacuum-packed in a transport/storage container. A PBE container is installed in the cockpit. PBEs for cabin crew are installed in cabin.

FIRST OFFICER CONSOLE
(702VU)



PORTABLE BREATHING EQUIPMENT
(PBE)

GENERAL & LOCATION

CREW PORTABLE OXYGEN SYSTEM D/O (3)

DESCRIPTION

The container is installed with a tamper seal and a serviceability indicator for the preflight inspection; the serviceability indicator is broken after opening the box.

NOTE: According to the supplier, another indicator is available which shows a yellow indicator if the container has not been opened.

The protective breathing hood works with a closed breathing circuit. The system is activated by a starter via a lanyard. The expired air will be regenerated, enriched with oxygen, and inhaled again. The oxygen is generated in exothermic chemical reaction between the potassium peroxide (KO_2), the humidity, and the carbon dioxide (CO_2) in the expired air; this reaction releases heat. The protective breathing equipment is composed of three main parts:

A hood with:

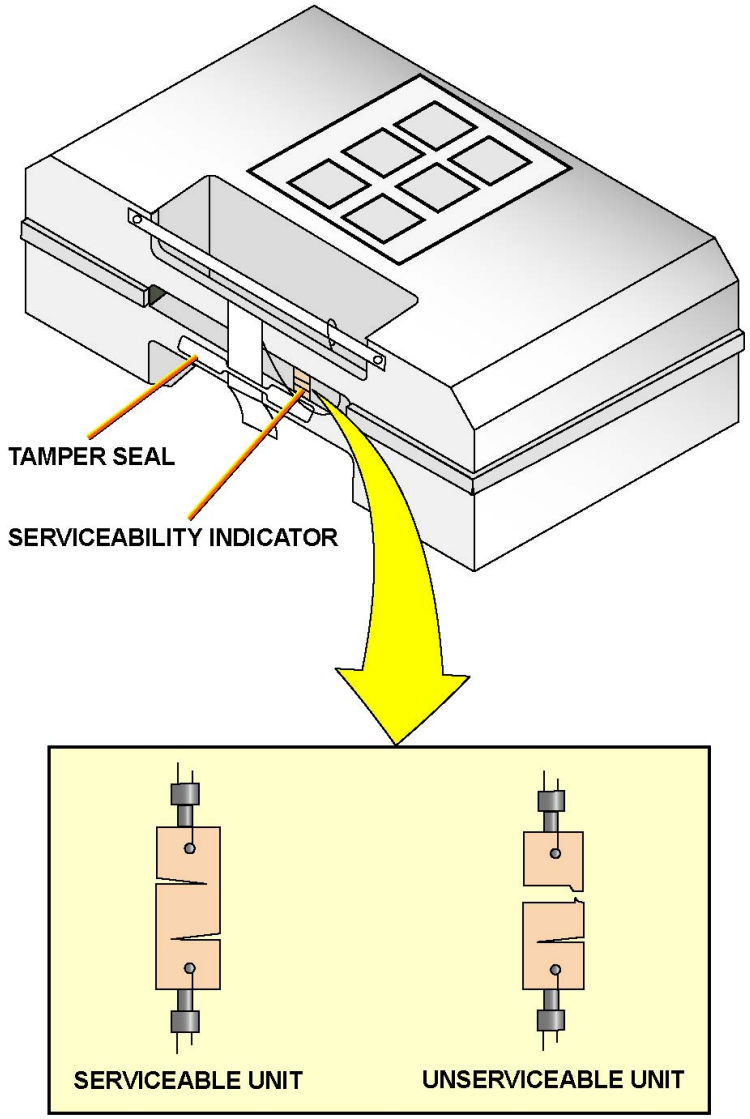
- the neck seal at the level of the neck,
- the straps attached to the hood maintain the inner mask around the back of the user head,
- a relief valve in the hood, which keeps the overpressure in the hood at a comfortable level.

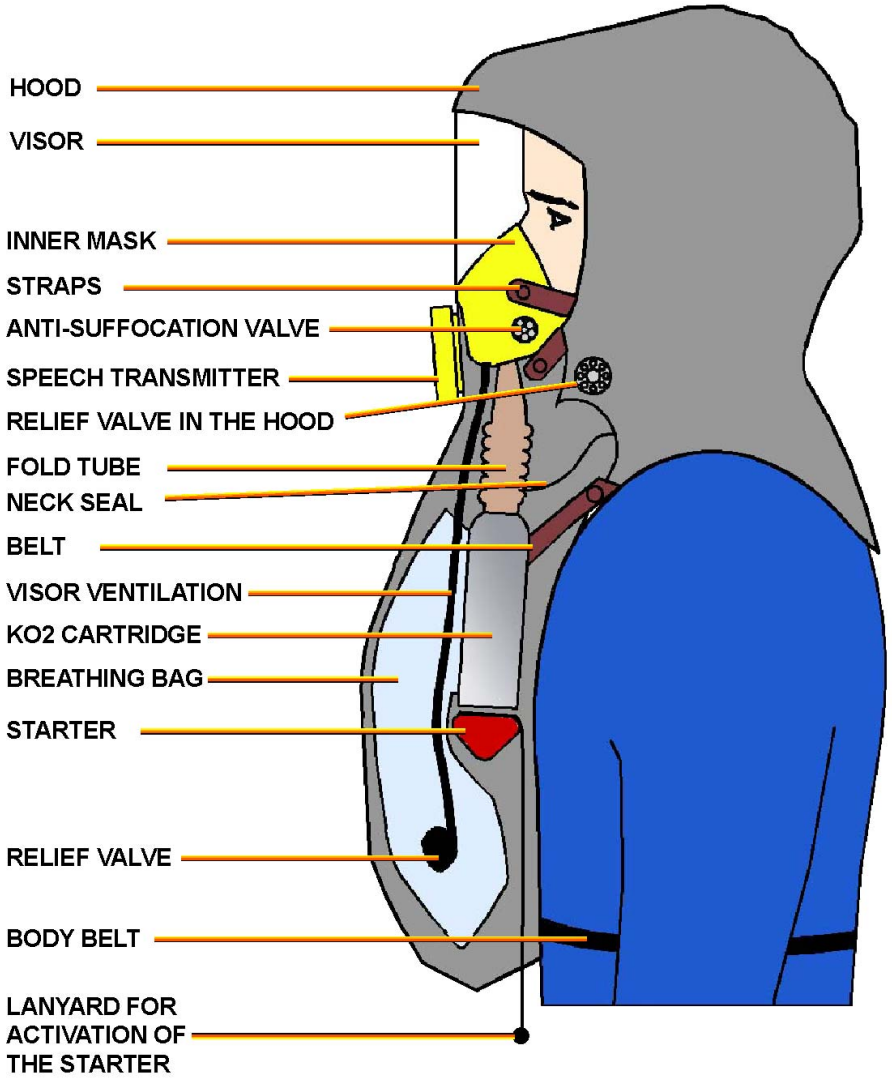
An inner mask installed with:

- an anti-suffocation valve, operated by a higher breathing resistance. The user can inhale through this valve from the volume between head and hood,
- a speech transmitter is located in front of the oronasal mask.

A KO_2 cartridge has:

- an attached breathing bag installed with a volume-controlled relief valve,
- a starter activated by a lanyard,
- a fold tube (or breathing hose) connected to the oronasal mask,
- a belt, which holds the cartridge on the hood.



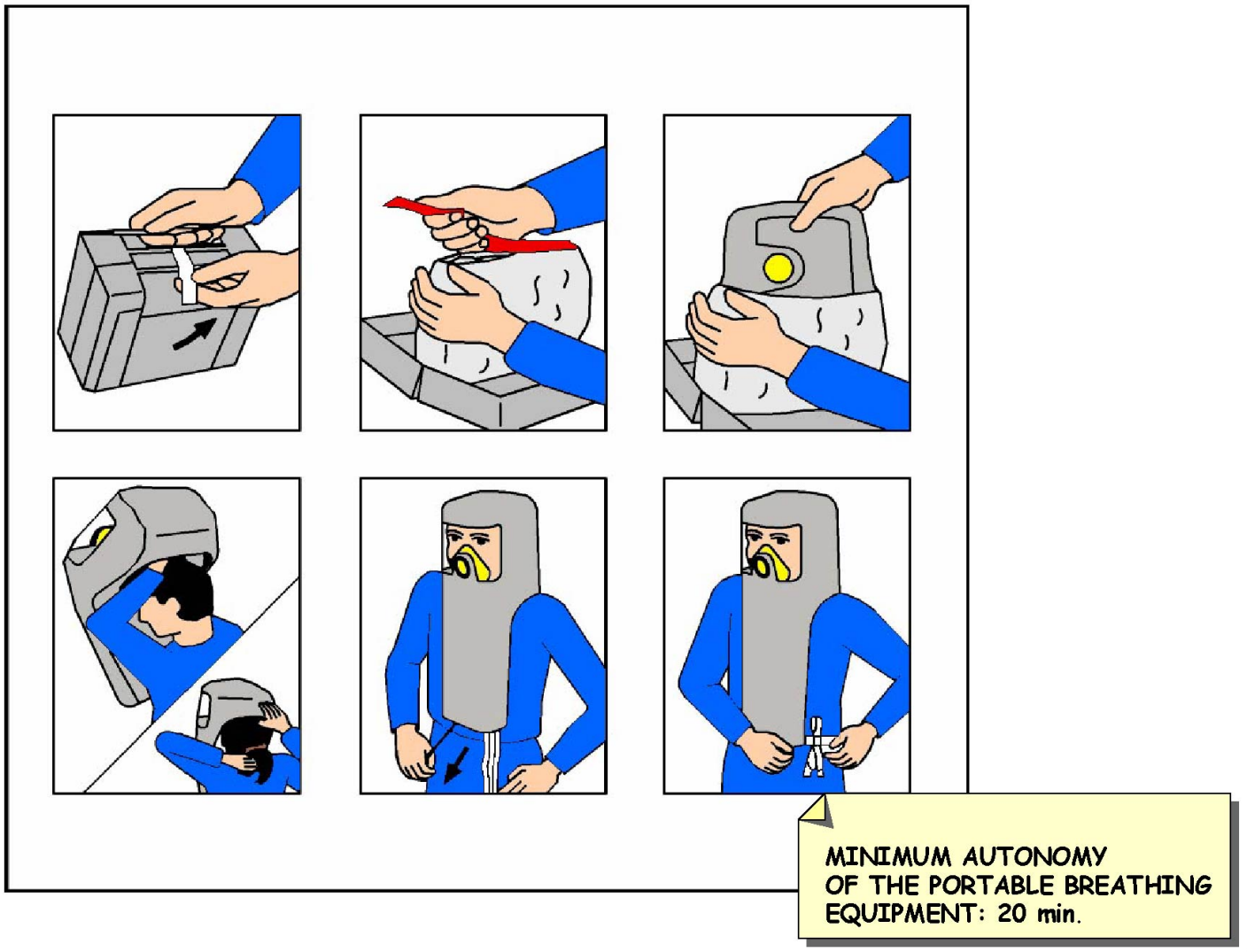


DESCRIPTION

CREW PORTABLE OXYGEN SYSTEM D/O (3)

OPERATION

The PBE is stored under a vacuum in a specially designed bag. The bag is mounted inside a box in such a way that, after opening the box, the hood is removed and the vacuum protection is automatically opened with a single movement. The hood is fire resistant.


MINIMUM AUTONOMY
OF THE PORTABLE BREATHING
EQUIPMENT: 20 min.

OPERATION

CABIN PORTABLE OXYGEN EQUIPMENT D/O (3)

BOTTLE

The oxygen source is a high-pressure cylinder. The high-pressure cylinders are installed in brackets with quick-release clamps.

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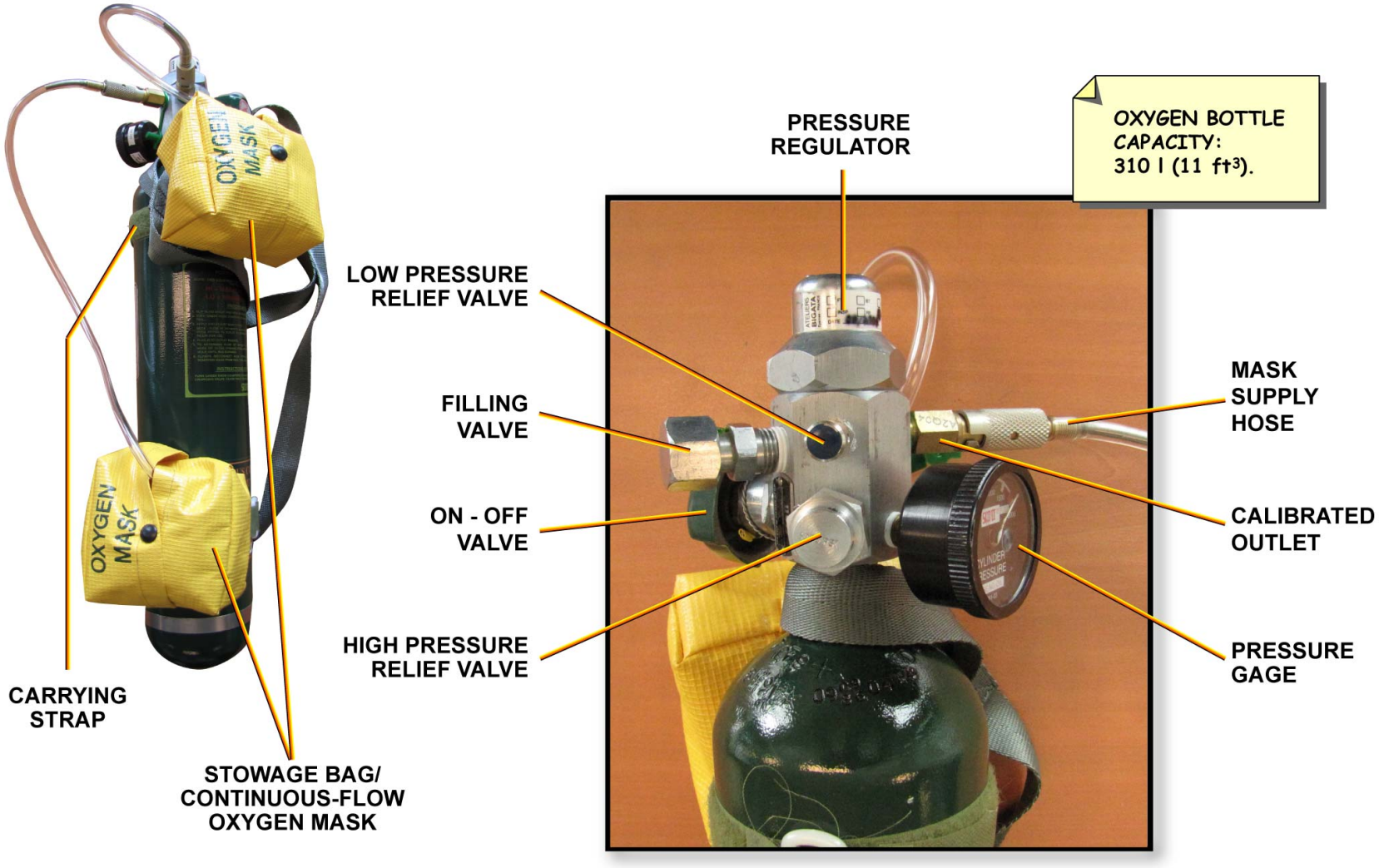
OXYGEN MASK
OXYGEN MASK
CARRYING STRAP
STOWAGE BAG/ CONTINUOUS-FLOW OXYGEN MASK
LOW PRESSURE RELIEF VALVE
FILLING VALVE
ON - OFF VALVE
HIGH PRESSURE RELIEF VALVE
PRESSURE REGULATOR
OXYGEN BOTTLE CAPACITY: 310 l (11 ft³).
MASK SUPPLY HOSE
CALIBRATED OUTLET
PRESSURE GAGE

BOTTLE

CABIN PORTABLE OXYGEN EQUIPMENT D/O (3)

FIRST AID MASK

The continuous-flow first aid oxygen mask supplies oxygen for therapeutic purposes. The flexible supply hose connects the mask to the calibrated continuous-flow outlet of the bottle.

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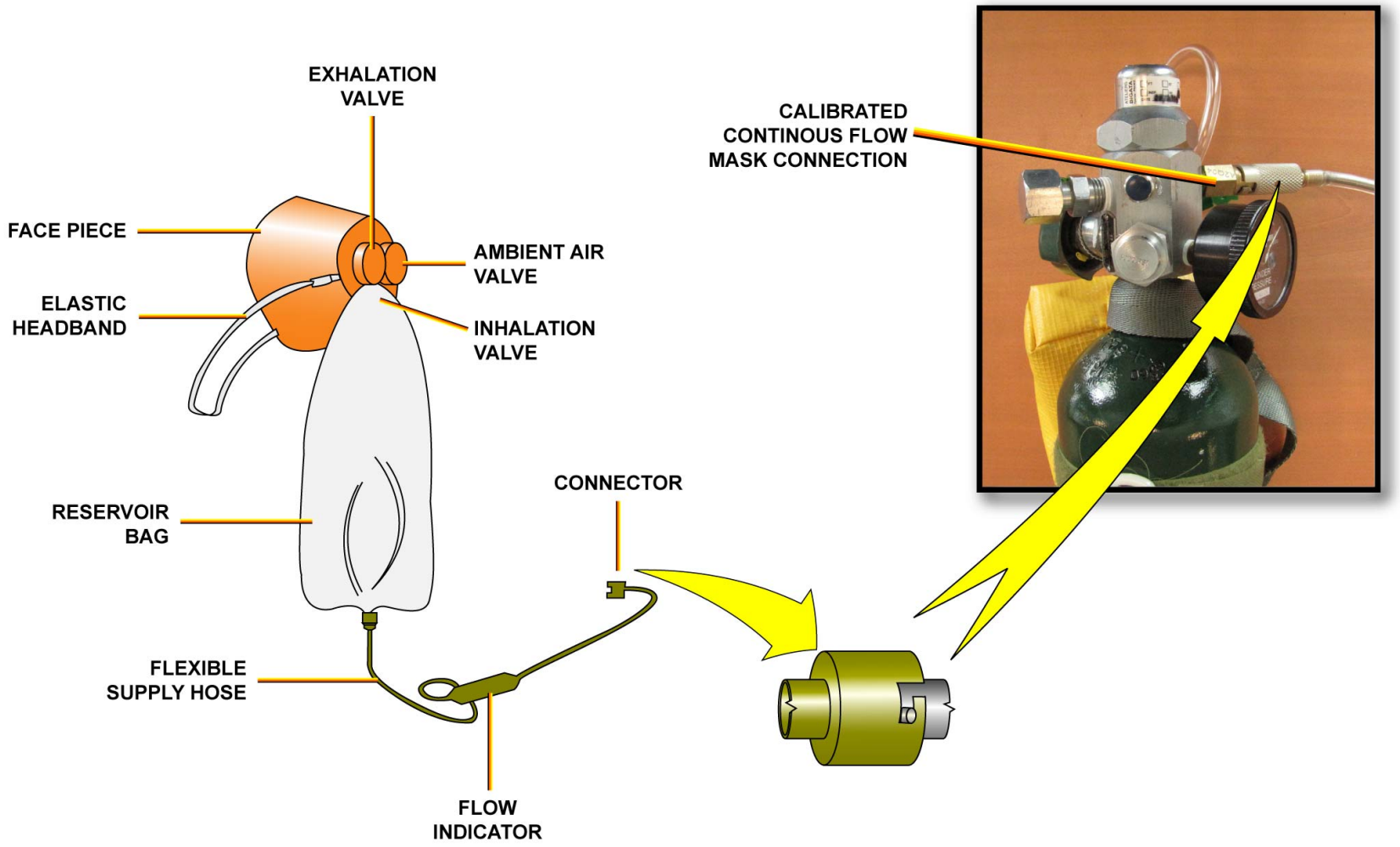

FIRST AID MASK

CABIN PORTABLE OXYGEN EQUIPMENT D/O (3)

PORTABLE BREATHING EQUIPMENT

The Portable Breathing Equipment gives breathing means and eyes protection for one user in case of: fire, or emission of smoke and/or noxious gases. It lets the user move freely.The Portable Breathing Equipment container is installed with a good-condition indicator and a tamper seal for the pre-flight inspection. The annular container in the hood, full of compressed oxygen, releases the amount of oxygen that the user needs. The gas circulation is generated when the user breathes in and out. Cockpit Portable Breathing Equipment container can be optionally installed in the cabin.

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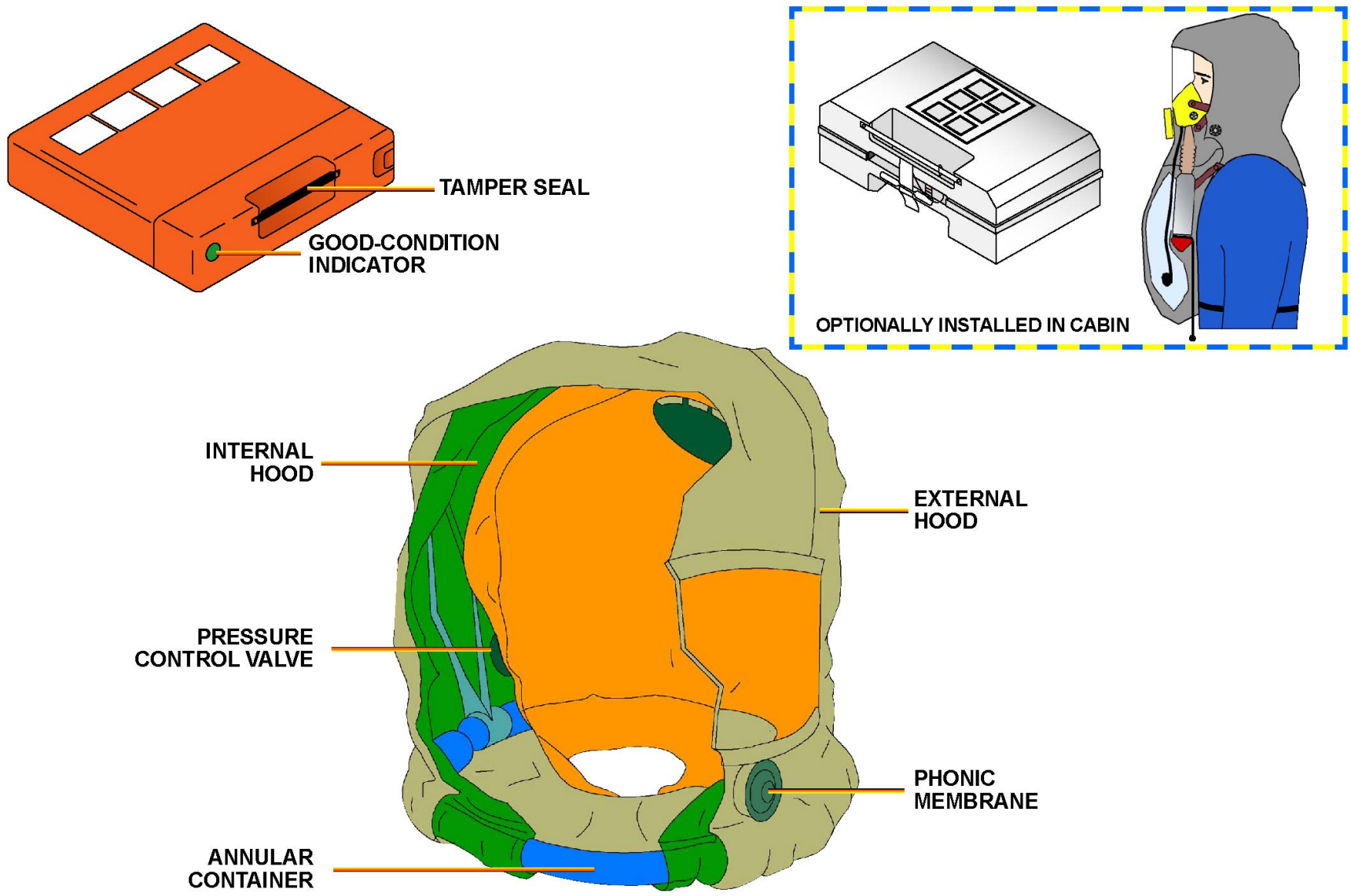


PORTABLE BREATHING EQUIPMENT

OXYGEN SYSTEM LINE MAINTENANCE (2)

DAILY CHECK

During the daily check the external walk around will include the visual check of the crew oxygen cylinder overpressure (Green) discharge disc to be sure that it is not missing.
The ECAM DOOR/OXY page shows the crew oxygen pressure indication.
If the pressure is less than 1500 PSI for a 77 cuft bottle, an amber half frame (advisory) is shown for information.
For a 115 cuft bottle, the threshold is 1000 PSI.
In this case, check the AMM. This is to see if the minimum oxygen pressure available to the flight crew is within the permitted limits.
Refer to the minimum flight crew oxygen pressure chart and find the minimum pressure according to the ambient temperature and the number of crew members.
If the pressure is less than the minimum flight crew oxygen pressure the oxygen cylinder must be changed.
Push the reset test slider, the blinker turns yellow and goes back to black again showing that the regulator is leak tight.
Press the harness inflation control, the blinker turns yellow and goes back to black again showing that the harness is leak tight.
Pressing the emergency rotation knob tests the on demand system.
The microphone is tested by activating the loudspeakers, the interphone, and by pressing the emergency rotation knob.
When the tests are completed, make sure that the NORMAL / 100% selector is locked in the 100% position, and the reset slider returns to the UP position.

REF TEMPERATURE *		°C	-10	0	10	20	30	40	50
		°F	14	32	50	68	86	104	122
MIN ** BOTTLE PRESSURE (PSI)	2 CREW MEMBERS		656	681	706	731	756	781	806
	2 CREW MEMBERS + 1 OBS		861	893	926	959	992	1024	1057
	2 CREW MEMBERS + 2 OBS		1090	1132	1173	1215	1256	1298	1339

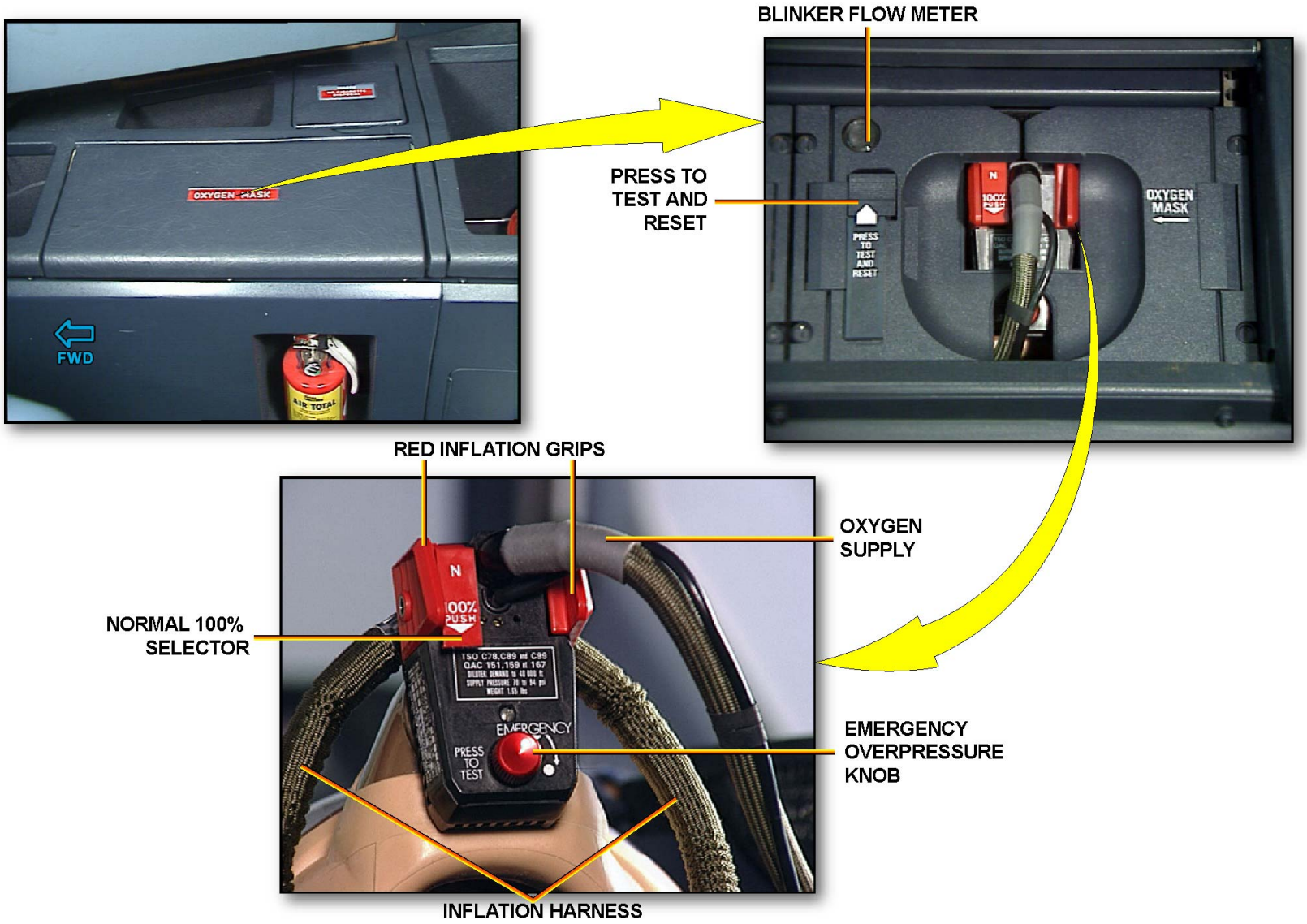
MINIMUM FLIGHT CREW OXYGEN PRESSURE

This table is an example of minimum flight crew oxygen pressure. Three possible oxygen bottle sizes can be installed in the aircraft.

* REF TEMPERATURE:
- ON GROUND: (OAT + CAB TEMP)/2
- IN FLIGHT: CAB TEMP (°C) -10°C
  or CAB TEMP (°F) -18°F

** MINIMUM BOTTLE PRESSURE TO COVER:
- PREFLIGHT CHECKS
- USAGE OF OXYGEN WHEN ONLY ONE PILOT IS IN THE COCKPIT
- UNUSABLE QUANTITY (TO ENSURE REGULATOR FUNCTIONING MIN PRESSURE)
- NORMAL SYSTEM LEAKAGE

DAILY CHECK


BLINKER FLOW METER
PRESS TO TEST AND RESET
OXYGEN MASK
FWD
RED INFLATION GRIPS
OXYGEN SUPPLY
NORMAL 100% SELECTOR
EMERGENCY OVERPRESSURE KNOB
INFLATION HARNESS
N
100%
PUSH
EMERGENCY
PRESS TO TEST

DAILY CHECK

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OXYGEN SYSTEM LINE MAINTENANCE (2)

MAINTENANCE TIPS

CREW OXYGEN MASK STOWING

Proper stowing of the mask is essential for quick and efficient donning of the mask.
Open the stowage box flap doors and position the flexible hose correctly.
Engage the mask assembly with the regulator on top.
Close the left flap door carefully while pushing the reset test slider to retract the OXY ON flag.
At the end of the re stowing operation, do the IN SITU TEST.

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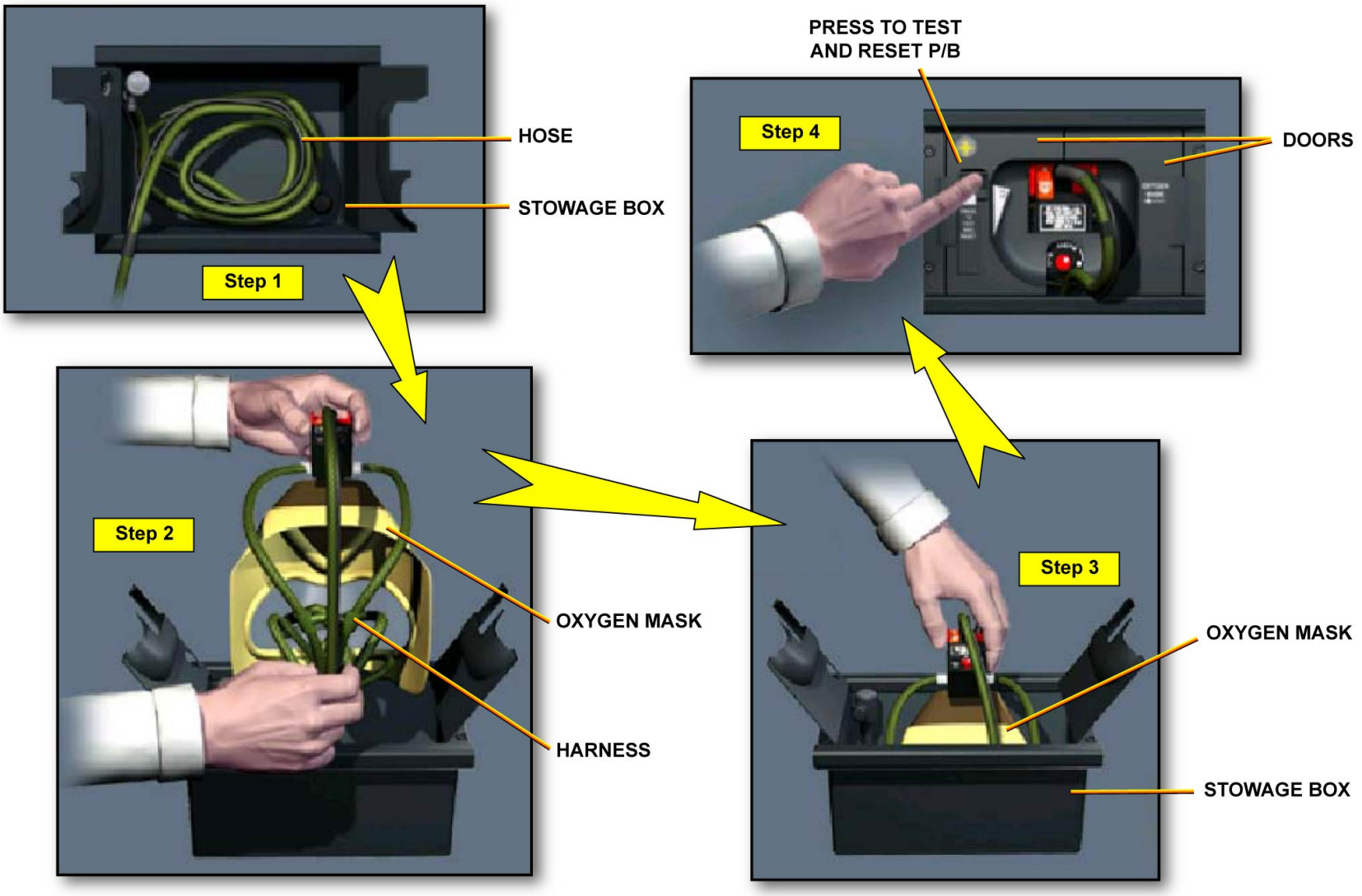

MAINTENANCE TIPS - CREW OXYGEN MASK STOWING

AIRBUS S.A.S.
31707 BLAGNAC cedex, FRANCE
STM
REFERENCE UGB13131
APRIL 2013
PRINTED IN FRANCE
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